

REPORT 2001

INTERNATIONAL UNION OF THEORETICAL AND
APPLIED MECHANICS

REPORT 2001



Eindhoven University of Technology
THE NETHERLANDS

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Bureau: Officers and Members

The following members of the Bureau of IUTAM have been elected for the period 1 November 2000 to 31 October 2004:

Officers

Professor H.K. Moffatt (UK)	President
Professor W. Schiehlen (Germany)	Vice-President
Professor L.B.Freund (USA)	Treasurer
Professor D.H. van Campen (Netherlands)	Secretary-General

Members

Professor C. Cercignani (Italy)	elected (2000)
Professor J. Engelbrecht (Estonia)	(1996)
Professor R. Narasimha (India)	(2000)
Professor J. Salencon (France)	(2000)

Secretariat

IUTAM-Secretariat, Department of Mechanical Engineering,
Eindhoven University of Technology, 5600 MB Eindhoven, The Netherlands
Telephone: +31 40 247 2710, Telefax: +31 40 243 7175
E-mail: sg@iutam.net

Past Officers

	<i>Elected President</i>	<i>Vice-President</i>	<i>Treasurer</i>	<i>Secretary</i>
1948	J. Péres (France)	R.V. Southwell (UK)	H.L. Dryden (USA)	J.M. Burgers (Netherlands)
1952	H.L. Dryden (USA)	J. Péres (France)	G. Temple (UK)	F.A. v. d. Dungen (Belgium)
1956	F.K.G. Odqvist (Sweden)	H.L. Dryden (USA)	G. Temple (UK)	M. Roy (France)
1960	G. Temple (UK)	F.K.G. Odqvist (Sweden)	W.T. Koiter (Netherlands)	M. Roy (France)
1964	M. Roy (France)	G. Temple (UK)	W.T. Koiter (Netherlands)	H. Görtler (Germany)
1968	W.T. Koiter (Netherlands)	M. Roy (France)	H. Görtler (Germany)	F.I. Niordson (Denmark)
1972	H. Görtler (Germany)	W.T. Koiter (Netherlands)	D.C. Drucker (USA)	F.I. Niordson (Denmark)

1976	F.I. Niordson (Denmark)	H. Görtler (Germany)	D.C. Drucker (USA)	J. Hult (Sweden)
1980	D.C. Drucker (USA)	F.I. Niordson (Denmark)	E. Becker (Germany)	J. Hult (Sweden)
1984	J. Lighthill (UK)	D.C. Drucker (USA)	L.v. Wijngaarden (Netherlands)	W. Schiehlen (Germany)
1988	P. Germain (France)	J. Lighthill (UK)	L.v. Wijngaarden (Netherlands)	W. Schiehlen (Germany)
1992	L.v. Wijngaarden (Netherlands)	P. Germain (France)	B.A. Boley (USA)	F. Ziegler (Austria)
1996	W. Schiehlen (Germany)	L.v. Wijngaarden (Netherlands)	L.B. Freund (USA)	M.A. Hayes (Ireland)

Past Congress Presidents

<i>Nr.</i>	<i>Year</i>	<i>Place</i>	<i>Congress-President</i>
1	1924	Delft, The Netherlands	C.B. Biezeno
2	1926	Zürich, Switzerland	E. Meissner
3	1930	Stockholm, Sweden	A.F. Enström
4	1934	Cambridge, UK	C.E. Inglis
5	1938	Cambridge, USA	K.T. Compton
6	1946	Paris, France	H. Villat
7	1948	London, UK	R.V. Southwell
8	1952	Istanbul, Turkey	K. Erim
9	1956	Brussels, Belgium	F.H. van den Dungen
10	1960	Stresa, Italy	G. Colonna
11	1964	Munich, Germany	H. Görtler
12	1968	Stanford, USA	N.J. Hoff
13	1972	Moscow, USSR	N.I. Muskhelishvili
14	1976	Delft, The Netherlands	W.T. Koiter
15	1980	Toronto, Canada	F.P.J. Rimrott
16	1984	Lyngby, Denmark	F. Niordson
17	1988	Grenoble, France	P. Germain and M. Piau
18	1992	Haifa, Israel	J. Singer
19	1996	Kyoto, Japan	T. Tatsumi
20	2000	Chicago, USA	H. Aref

Adhering Organizations

Argentina (1959)

Asociacion Argentina de Mecanica Computacional
Güemes 3450, 3000 Santa Fe
Chairman: Dr. S.R. Idelsohn
Representatives in IUTAM: Dr. S. R. Idelsohn

Australia (1964)

The Australian National Committee for Theoretical and Applied Mechanics of the
Australian Academy of Sciences
GPO Box 783, Canberra City, ACT 260
Chairman: Prof. N. Phan-Thien
Representatives in IUTAM: Prof. N. Phan-Thien, Prof. R.I. Tanner

Austria (1951)

Austrian National Committee for Theoretical and Applied Mechanics of the Austrian
Academy of Sciences
Dr.-Ignaz-Seipel-Platz 2, A-1010 Wien
Chairman: Prof. H. Troger
Deputy Chairman: Prof. A. Kluwick
Representatives in IUTAM: Prof. A. Kluwick

Belgium (1978)

The National Committee for Theoretical and Applied Mechanics of the Class of Sciences
of the Royal Belgian Academy
Hertogsstraat 1, B-1000 Brussels
President: Prof. Roland Keunings
Vice-President: Prof. Albert Cardon
Secretary: Prof. R. Bourgois
Representatives in IUTAM: Prof. R. Keunings, Prof. A.H. Cardon, Prof. R. Bourgois

Brazil (1982)

Associação Brasileira de Ciências Mecânicas
Avenida Rio Branco 124/18º andar, 20040-001 Rio de Janeiro
Prof. R. Cotta
Representatives in IUTAM: Prof. L. Bevilacqua

Bulgaria (1969)

Bulgarian National Committee on Theoretical and Applied Mechanics of the Bulgarian
Academy of Sciences, 1, 15 novembre str., BG-1040 Sofia
President: Prof. A. Baltov
Secretary: Doc. Dr. Evtim Toshev
Representatives in IUTAM: Prof. H. Kuyumdzhev

Canada (1963)

The National Research Council of Canada,
Montreal Road, Ottawa, Canada K1A 0R6

President: Dr. A. Carty

National Committee for IUTAM, Chairman: Prof. S.B. Savage

Representatives in IUTAM: Prof. D. Weaver, Prof. F.P.J. Rimrott, Prof. S.B. Savage,
Prof. J. Hansen

Chile (1996)

The Chile National Committee on Theoretical and Applied Mechanics
Academia Chilena de Ciencias, Almirante Montt 454, Santiago, Chile

President: Prof. E. Tirapegui

Representatives in IUTAM: Prof. F. Lund

China (1980)

The Chinese Society of Theoretical and Applied Mechanics
15 Zhong Guan Cun Road, Beijing 100080

President: Prof. Yi-Long Bai

Vice-President: Prof. Youshi Hong

Representatives in IUTAM: Prof. Y. Bai, Prof. Y.S. He, Prof. W. Yang, Prof. Z. Zheng

China-Hong Kong (1996)

The Hong Kong Society of Theoretical and Applied Mechanics (HKSTAM)
Department of Mechanical Engineering, The Hong Kong University of Science and
Technology Clear Water Bay, Kowloon

President: Prof. T.X. Yu (HKUST)

Vice-President: Prof. A. Leung (City U)

Secretary: Dr. Q.P. Sun (HKUST)

Representatives in IUTAM: Prof. P. Tong

China-Taipei (1980)

The Society of Theoretical and Applied Mechanics
Institute of Applied Mechanics, National Taiwan University, Taipei, Taiwan 106

President: Prof. C.-S. Yeh

Secretary: Prof. M.-K. Kuo

Representatives in IUTAM: Prof. W.-H. Chen, Prof. C.-S. Yeh

Croatia (1994)

Croatian Society of Mechanics
Ivana Lucića 5, HR-10000 Zagreb, Croatia.

President: Prof. Pavao Marovic.

Representatives in IUTAM: Prof. I. Alfirevic

Czech Republic (1993) (former Czechoslovakia (1949-1993))

The National Committee of Theoretical and Applied Mechanics

Academy of Sciences of the Czech Republic, Institute of Thermomechanics, Dolejskova 5, CZ-18200 Prague 8

Chairman: Dr. R. Dvorák

Secretary: Prof. M. Okrouhlík

Representatives in IUTAM: Dr. R. Dvorák

Denmark (1949)

National Committee for Theoretical & Applied Mechanics,

The Royal Danish Academy of Sciences and Letters, H.C. Andersens Boulevard 35, DK-1553 Copenhagen V.

President: Prof. B. Munk Olsen

Secretary: Prof. Ole Hansen

Representatives in IUTAM: Prof. P. A. Madsen, Prof. N. Olhoff

Egypt (1976)

Academy of Scientific Research and Technology

Egyptian Committee of Theoretical and Applied Mechanics 101 Kasr El Eini Street, Cairo, Egypt.

ECTAM Chairman: Prof. M.K. Ismail

Secretary General: Prof. Z.Z. Momeh

Representatives in IUTAM: Prof. M. K. Ismail

Estonia (1992)

Estonian Committee for Mechanics,

Akadeemia tee 21, EE-12618 Tallinn

Chairman: Prof. J. Engelbrecht

Representatives in IUTAM: Prof. J. Engelbrecht

Finland (1952)

The Finnish National Committee on Mechanics

Helsinki University of Technology, P.O.Box 4100, FIN-02015 HUT, Finland

Chairman: Prof. Mauri Määttänen

Secretary: Prof. Juha Paavola

Representatives in IUTAM: Prof. M. Määttänen, Prof. J. Paavola

France (1949)

Comité National Français de Mécanique

Académie des Sciences, 23, quai Conti, F-75006 Paris

President: Prof. Gérard Iooss

Secretary: Prof. Olivier Maisonneuve

Representatives in IUTAM: Prof. D. Barthes-Biesel, Prof. P. Suquet, Prof. S. Zaleski, Prof. A. Zaoui

Georgia (2000)

National Committee of Theoretical and Applied Mechanics

I. Vekua Institute of Applied Mathematics of Tbilisi State University, 2 University Str.,
Tbilisi 380043

Co-Chairmen: Prof. G. Jaiani, Prof. D. Danelia

Representatives in IUTAM: Prof. G. Jaiani

Germany (1950)

Deutsches Komitee für Mechanik (DEKOMECH)

Institut für Baumechanik und Numerische Mechanik, Universität Hannover, Appelstraße
9 A, D-30167 Hannover

Chairman: Prof. E. Stein

Secretary: Prof. G.C. Kuhn

Representatives in IUTAM: Prof. U. Gabbert, Prof. C. Miehe, Prof. W. Schröder,
Prof. S. N. W. Wagner

Greece (1979)

Hellenic Society for Theoretical and Applied Mechanics

National Technical University of Athens, Laboratory of Steel Structures, 42 Patission
street, GR-10682 Athens

President: Prof. A.N. Kounadis

Secretary: Prof. D.E. Beskos

Representatives in IUTAM: Prof. A.N. Kounadis

Hungary (1948)

Hungarian National Committee for IUTAM

Department of Structural Mechanics, Budapest University of Technology and
Economics, Műegyetem rkp. 3, H-1521 Budapest

President: Prof. S. Kaliszky

Secretary: Prof. G. Stepan

Representatives in IUTAM: Prof. S. Kaliszky

India (1950)

National Committee for Theoretical and Applied Mechanics of the Indian National
Science Academy, Bahadur Shah Zafar Marg, New Delhi - 110 002

Chairman: Dr. M.L. Munjal

Representatives in IUTAM: Prof. N.K. Gupta, Prof. T. Kant, Prof. M. L. Munjal,
Dr. T.V.S.R. Appa Rao, Dr. P. Viswanath

Ireland (1984)

Irish National Committee for Theoretical and Applied Mechanics

Royal Irish Academy, 19 Dawson Street, Dublin 2

Chairman: Prof. P. O'Donoghue

Secretary: Dr. J.J. Grannell

Representatives in IUTAM: Prof. P.E. O'Donoghue

Israel (1950)

The Israel Society of Theoretical and Applied Mechanics
Dept. of Mechanical Engineering, Technion-Israel Institute of Technology, Haifa 32000
President: Prof. S.R. Bodner
Representatives in IUTAM: Prof. S. R. Bodner, Prof. T. Miloh

Italy (1949)

Associazione Italiana di Meccanica Teorica ed Applicata
Piazza Leonardo da Vinci 32, I-20133 Milano
President: Prof. A. Morro
Secretary: Prof. C. Cinquini
Representatives in IUTAM: Prof. G. Maier, Prof. C. Cercignani, Prof. P. Podio-Guidugli,
Prof. F. Vatta

Japan (1951)

The National Committee for Theoretical and Applied Mechanics
Science Council of Japan, 7- 22-34 Roppongi, Minato-ku, Tokyo 106-8555
Chairman: Prof. T.Kambe
Representatives in IUTAM: Prof. T. Kambe, Prof. H. Kitagawa, Prof. T. Kobayashi,
Prof. E. Watanabe

Kazakhstan (1996)

The Kazakhstan National Committee on Theoretical and Applied Mechanics
National Academy of Sciences of the Republic of Kazakhstan, Shevchenko street 28,
480021 Almaty, Kazakhstan
Chairman: Prof. Zh.S. Erzhanov
Secretary: Dr. A.A. Baimukhametov
Representatives in IUTAM: Prof. Zh. S. Erzhanov

Korea (1989)

Korean Society of Theoretical and Applied Mechanics
Department of Aerospace Engineering, Seoul National University, Seoul 151-742
President: Prof. Jung Yul Yoo
Secretary: Prof. Seung Jo Kim
Representatives in IUTAM: Prof. J.Y. Yoo

Latvia (1992)

Latvian National Committee for Mechanics
Latvian Academy of Sciences, Akademijas laukums 1, Riga LV-1524
President: Prof. V. Tamuzs
Vice-President: Prof. O. Lielausis
Representatives in IUTAM: Prof. V. Tamuzs

Morocco (1998)

Societe Marocaine des Sciences Mecaniques,
Madinat Al Irfane, Rabat Institut, Rabat
President: Professor J. Khalid Naciri
Representatives in IUTAM: Prof. M. Belhaq

Netherlands (1952)

Dept. for Mechanics of the Royal Institution of Engineers in the Netherlands
c/o Philips Research Laboratories, Building WB-1-57, Prof. Holstlaan 4, NL
5656 AA Eindhoven.
President: Dr. J.F. Dijkman
Representatives in IUTAM: Prof. J. A. Battjes, Prof. D.H. van Campen,
Dr. J. F. Dijkman

New Zealand (1979)

The Royal Society of New Zealand
P.O. Box 598, Wellington
President: Sir Gil Simpson
Chief Executive Officer: Dr. S.C. Thompson
Representatives in IUTAM: Dr. G. Weir

Norway (1949)

National Committee on Theoretical and Applied Mechanics
Norwegian Acad. Sciences and Letters, Dept. of Maths, University of Oslo,
P.O.Box 1053, Blindern, N-0316 Oslo 3
President: Prof. B. Gjevik
Representatives in IUTAM: Prof. B.N. Gjevik

Poland (1952)

Committee for Mechanics of the Polish Academy of Sciences
ul. Swietokrzyska 21, PL-00 049 Warszawa
Chairman: Prof. G. Szefer
Representatives in IUTAM: Prof. W. Gutkowski, Prof. G. Szefer

Portugal (1968)

Portuguese Society of Theoretical, Applied and Computational Mechanics
Laboratorio Nacional de Engenharia Civil, Avenida do Brasil 101, 1700-066 Lisboa
President: Prof. J. Novais Barbosa
Vice-Presidents: Prof. J.A.C. Martins, Prof. C. Mota Soares
Representatives in IUTAM: Prof. J. A. C. Martins

Romania (1956)

Romanian Academy, Department of Mathematics, Romanian National Committee of Theoretical and Applied Mechanics, Calea Victoriei 125, 71102 Bucharest, Romania
Head of Department: Dr. G. Marinocchi
Representatives in IUTAM: Prof. N.D. Cristescu

Russia (1956) (former USSR (1956-1991))

Russian National Committee on Theoretical and Applied Mechanics
Prospekt Vernadskogo 101 : 1 , Moscow 117526
President: Prof. G.G. Chernyi
Secretary: Prof. G.K. Mikhailov
Representatives in IUTAM: Prof. G. G. Chernyi, Prof. D.M. Klimov,
Prof. G.K. Mikhailov, Prof. N.F. Morozov

Saudi Arabia (1988)

King Abdulaziz City of Science and Technology
International Cooperation Department, P.O. Box 6086, Riyadh 11442
President: Dr. S.A. Al-Athel
Director: Mr. Fahad Huraib
Representatives in IUTAM: Dr. Saleh A. Al-Athel

Slovakia (1993)

The Slovak Society for Mechanics
Council of Scientific Societies, Stefánikova 49, SK-811 04 Bratislava
President: Prof. J. Brilla
Representatives in IUTAM: Prof. J. Brilla

Slovenia (1994)

Slovene Mechanics Society, Faculty of Mechanical Engineering
University of Maribor, Smetanova 17, 2000 Maribor
President: Prof. Leopold Skerget
Secretary: Prof. Jure Marn
Representatives in IUTAM: Prof. M. Saje

South Africa (1994)

National Research Foundation (NRF), Association for Theoretical and Applied Mechanics (SAAM)
South African ICSU Secretariat, P.O. Box 2600, Pretoria 0001
President: Dr. I. Gledhill
Representatives in IUTAM: Prof. C. G. de K. du Toit

Spain (1950)

Instituto Nacional de Tecnica Aeroespacial
Carretera de Ajalvir km. 4,00, Torrejón de Ardoz, 28850 Madrid
Representatives in IUTAM: Mr. A. Moratilla

Sweden (1950)

Swedish National Committee for Mechanics
Chalmers University of Technology, SE-412 96 Gothenburg
President: Prof. L. Josefson, Department of Applied Mechanics
Secretary: Prof. L. Davidson, Department of Thermo and Fluid Dynamics
Representatives in IUTAM: Prof. B. Storåkers, Prof. A. Boström, Prof. B. Lundberg

Switzerland (1950)

Board of the Federal Institutes of Technology
(Rat der Eidgenössischen Technischen Hochschulen)
ETH-Zentrum, CH-8092 Zürich
President: Prof. F. Waldvogel
Secretary-General: Dr. S. Brändli
Representatives in IUTAM: Prof. P. A. Monkewitz, Prof. M.B. Sayir

Turkey (1977)

Turkish National Committee of Theoretical and Applied Mechanics
Istanbul Teknik Üniversitesi, Fen-Edebiyat Fakültesi, Maslak 80626 Istanbul
President: Prof. Yalçın Aköz
Secretary-General: Prof. Mehmet Ali Tasdemir
Representatives in IUTAM: Prof. E.S. Suhubi

UK (1948)

The Royal Society
6 Carlton House Terrace, London SW1Y 5AG
Executive Secretary of the Royal Society: Mr. Stephen Cox
Chairman of UK Panel for IUTAM: Prof. P.W. Carpenter
Secretary of UK Panel for IUTAM: Prof. B.L. Karihaloo
Representatives in IUTAM: Prof. C.R. Calladine, Prof. P.W. Carpenter, Prof. N. Jones,
Prof. T.J. Pedley

Ukraine (1955)

National Committee of Ukraine on Theoretical and Applied Mechanics
S.P.Timoshenko Institute of Mechanics, 3 Nesterov Str., Kyiv 03680
Chairman: Prof. A.N. Guz
Secretary-General: Prof. J.J.Rushchitsky
Representatives in IUTAM: Prof. A.N. Guz

USA (1949)

The U.S. National Committee on Theoretical and Applied Mechanics

National Academy of Sciences, 2101 Constitution Avenue, N.W.,

Washington, DC., 20418

Chairman: Prof. Hassan Aref

Secretary: Prof. Carl T. Herakovich

Representatives in IUTAM: Prof. R. J. Adrian, Prof. H. Aref, Prof. T. Belytschko,

Prof. C.T. Herakovich, Prof. L.G. Leal

Viet Nam (1990)

Vietnamese Association of Mechanics (VAM)

Hoi Co Hoc Vietnam, 264 Doi Can, Hanoi

President: Prof. Nguyen Van Dao

Secretary: Prof. Do Sanh

Representatives in IUTAM: Prof. N. Van Dao

Yugoslavia (1952)

Yugoslav Society of Mechanics

Fac. of Mechanical Engineering, University of Belgrade, 27. Marta 80,

YU-11120 Belgrade

President: Prof. D.D. Ruzic

Secretary: Prof. M. Nedeljkovic

Representatives in IUTAM: Prof. D.D. Ruzic

Affiliated Organizations

CISM (1970)

International Centre for Mechanical Sciences
Palazzo del Torso, Piazza Garibaldi, I-33100 Udine, Italy
Director: Prof. G. Bianchi
President: Avv. Vinicio Turello
Secretary-General: Prof. B. Schrefler
Rectors: Prof. M. Sayir, Prof. W. Schneider, Prof. M.G. Velarde
Representative of CISM in IUTAM: Prof. G. Bianchi
Representative of IUTAM in CISM: Prof. L. van Wijngaarden

ICHMT (1972)

International Centre for Heat and Mass Transfer
Mechanical Engineering Dept., Middle East Technical University,
06531 Ankara, Turkey
President: Prof. R.J. Goldstein
Secretary-General: Prof. F. Arinc
Representative of ICHMT in IUTAM: Prof. F. Arinc
Representative of IUTAM in ICHMT: Dr. R. Dvorák

ICR (1974)

International Committee on Rheology
Prof. D.F. James, Dept. of Mechanical and Industrial Engineering, University of Toronto,
Toronto, Ont M5S 3G8, Canada
Chairman: Prof. K. Walters
Secretary: Prof. D.F. James
Representative of ICR in IUTAM: Prof. L.G. Leal
Representative of IUTAM in ICR: Prof. F. Niordson
Representative of ICR in IUTAM-CC: Prof. L.G. Leal

IAVSD (1977)

International Association for Vehicle System Dynamics
Prof. Michael Valasek, Department of Mechanics, Faculty of Mechanical Engineering,
Czech International University in Prague, Kalovo Nanesti 13, 121 35 Praha 2,
Czech Republic
President: Prof. W. Kortüm
Secretary: Prof. M. Valasek
Representative of IAVSD in IUTAM: Prof. P. Lugner
Representative of IUTAM in IAVSD: Prof. W. Schiehlen
Representative of IAVSD in IUTAM-CC: Prof. P. Lugner

EUROMECH (1978)

European Mechanics Society

Institute of Thermomechanics, Dolejskova 5, Prague 8 Czech Republic

President: Prof. H.H. Fernholz

Secretary General: Prof. M. Okrouhlik

Representative of EUROMECH in IUTAM: Prof. T.J. Pedley

Representative of IUTAM in EUROMECH: Prof. W. Schiehlen

ISIMM (1978)

International Society for the Interaction of Mechanics and Mathematics

Prof. K. Wilmanski, Weierstrasse Institute, Berlin, Germany

President: Prof. I. Müller

Secretary: Prof. K. Wilmanski

Representative of ISIMM in IUTAM: Prof. M.A. Hayes

Representative of IUTAM in ISIMM: Prof. G. Iooss

Representative of ISIMM in IUTAM-CC: Prof. M.A. Hayes

ICF (1978)

International Congress on Fracture

Prof. T. Yokobori, School of Science and Engineering, Teikyo University,

Toyosatodai 1-1, Utsunomiya, 320, Japan

Founder President: Prof. T. Yokobori

President: Prof. Yiu-Wing Mai

Secretary-General: Prof. A.T. Yokobori, Jr.

Representative of ICF in IUTAM: Prof. B.L. Karihaloo

Representative of IUTAM in ICF: Prof. J.B. Leblond

Representative of ICF in IUTAM-CC: Prof. B.L. Karihaloo

ICM (1982)

International Congress on Mechanical Behaviour of Materials,

Prof. F. Ellyin, Dept. of Mechanical Engineering, University of Alberta,

Edmonton, Canada T6G 2G8

President: Prof. F. Ellyin

Secretary: Dr. J. Wolodko

Representative of ICM in IUTAM: Prof. F. Ellyin

Representative of IUTAM in ICM: Prof. S. R. Bodner

Representative of ICM in IUTAM-CC: Prof. T. Inoue

AFMC (1982)

Asian Fluid Mechanics Committee

Prof. Masaru Kiya, President Kushiro National College of Technology,
Kushiro 084-0916, Japan

Chairman: Prof. Masaru Kiya

Representative of AFMC in IUTAM: Prof. M. Kiya

Representative of IUTAM in AFMC: Prof. I. Imai

IACM (1984)

International Association for Computational Mechanics

Prof. E. Oñate, International Center for Numerical Methods in Engineering,
Edificio C-1, Gran Capitán s/n, E-08034 Barcelona, Spain

President: Prof. T.J.R. Hughes

Secretary: Prof. E. Oñate

Representative of IACM in IUTAM: Prof. J. T. Oden

Representative of IUTAM in IACM: Prof. E. R. de Arantes e Oliveira

Representative of IACM in IUTAM-CC: Prof. J. T. Oden

CACOFD (1992)

Caribbean Congress of Fluid Dynamics

c/o The Department of Math and Computer Science, The University of the West Indies,
St. Augustine, Trinidad, West Indies

President: Prof. F. Malpica

Secretary: Dr. W. Mellowes

Representative of CACOFD in IUTAM: Prof. H. Ramkissoon

Representative of IUTAM in CACOFD: Prof. D.D. Joseph

IABEM (1994)

International Association for Boundary Element Methods

Prof. M. Bonnet, CNRS et Ecole Polytechnique, Laboratoire de Mecanique des Solides,
Ecole Polytechnique, 91128 Palaiseau cedex, France

President: Prof. M. Bonnet

Secretary: Prof. R. Callego

Representative of IABEM in IUTAM: Prof. M. Bonnet

Representative of IUTAM in IABEM: Prof. G.C. Kuhn

ISSMO (1996)

International Society for Structural and Multidisciplinary Optimization

Prof. G. Rozvany, Department of Structural Mechanics, Budapest University of
Technology and Economics, Muegyetem rkp. 3, Kmf 35, H-1521 Budapest, Hungary

President: Prof. N. Olhoff

Secretary: Prof. V. Toropov

Representative of ISSMO in IUTAM: Prof. G. Rozvany

Representative of IUTAM in ISSMO: Prof. N. Olhoff

Representative of ISSMO in IUTAM-CC: Prof. M.P Bendsøe

HYDROMAG (1996)

International Association for Hydromagnetic Phenomena and Applications

Prof. S. Asai, Dept of Mat. Sciences, University of Nagoya, Furo-cho, Chikusa-ku, Nagoya 464-0, Japan

President: Prof. R. Moreau

Secretary General: Prof. A. Thess

Representative of HYDROMAG in IUTAM: Prof. R. Moreau

Representative of IUTAM in HYDROMAG: Prof. H.K. Moffatt

Representative of HYDROMAG in IUTAM-CC: Prof. R. Moreau

IHAV (1997)

International Institute of Acoustics and Vibration

Prof M. J. Crocker, Dept. of Mechanical Engineering, 201 Ross Hall, Auburn University, Auburn, AL 36849 USA

President: Prof. C.H. Hansen

Secretary: Prof. J.W. Verheij

Representative of IHAV in IUTAM: Prof. M. J. Crocker

Representative of IUTAM in IHAV: Prof. J. D. Achenbach

ICA (1998)

International Commission for Acoustics

Prof. Suk Wang Yoon, Sung Kyun Kwan University, Department of Physics, 300 Chunchun-dong, Suwon 440-746, Republic of Korea

President: Dr. Gilles Daigle

Secretary General: Prof. Suk Wang Yoon

Representative of ICA in IUTAM: Prof. S.H. Crandall

Representative of IUTAM in ICA: Prof. A. Boström

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Prof. Hiroshi Kitagawa	Japan	
Prof. Dmitry Klimov	Russia	
Prof. Alfred Kluwick	Austria	
Prof. Toshio Kobayashi	Japan	
Prof. Anthony Kounadis	Greece	
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Prof. Peter Lugner	Austria	Representative of IAVSD
Prof. Fernando Lund	Chile	
Prof. Bengt Lundberg	Sweden	
Prof. Per A. Madsen	Denmark	
Prof. Giulio Maier	Italy	
Prof. Joao Martins	Portugal	
Prof. Christian Miehe	Germany	
Prof. Gleb Mikhailov	Russia	
Prof. Touvia Miloh	Israel	
Prof. Keith Moffatt	UK	Bureau member Representative in HYDROMAG
Prof. Peter A. Monkewitz	Switzerland	
Mr. Angel Moratilla	Spain	

<i>Member</i>	<i>Country</i>	<i>Remarks</i>
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Prof. Manohar Munjal	India	
Prof. Mauri Määttänen	Finland	
Prof. Roddam Narasimha	India	Bureau member
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Prof. Harold Ramkissoon	West Indies	Representative of CACOFD
Prof. Friedrich Rimrott	Canada	
Prof. George Rozvany	Hungary	Representative of ISSMO
Prof. Dobroslav Ruzic	Yugoslavia	
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Prof. Stuart Savage	Canada	
Prof. Mahir Sayir	Switzerland	
Prof. Werner Schiehlen	Germany	Bureau member Representative in EUROMECH, in IAVSD
Prof. Wolfgang Schröder	Germany	
Prof. Bertil Storåkers	Sweden	
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Prof. Pierre Suquet	France	
Prof. Gwidon Szefer	Poland	
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Prof. Roger Tanner	Australia	
Prof. Tomomasa Tatsumi	Japan	Member-at-Large
Prof. Charl du Toit	South Africa	
Prof. Pin Tong	China	
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Prof. Furio Vatta	Italy	
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Prof. Zheming Zheng	China	

Members of the Congress Committee

<i>Member</i>	<i>Country</i>	<i>Year*</i>	<i>Remarks</i>
Prof. Hassan Aref	USA	2004	Member of XCCC
Prof. Martin P. Bendsøe	Denmark	2004	Representative of ISSMO
Prof. David Bogy	USA	2004	
Prof. Dick van Campen	Netherlands	2004	
Prof. David Durban	Israel	2004	
Prof. Juri Engelbrecht	Estonia	2004	
Prof. Norman Fleck	UK	2002	
Prof. Ben Freund	USA	2004	
Prof. Graham Gladwell	Canada	2004	
Prof. Peter Gudmundson	Sweden	2004	
Prof. Michael Hayes	Ireland	2002	Representative of ISIMM
Prof. Tatsuo Inoue	Japan	2002	Representative of ICM
Prof. Javier Jiménez	Spain	2002	
Prof. Tsutomu Kambe	Japan	2004	
Prof. Bhushan Karihaloo	UK	2004	Representative of ICF
Prof. Alfred Kluwick	Austria	2002	
Prof. Anthony Kounadis	Greece	2002	
Prof. Valery Kozlov	Russia	2002	
Prof. Yu Ku	USA		
Prof. Gary Leal	USA	2004	Representative of ICR
Prof. Peter Lugner	Austria	2004	Representative of IAVSD
Prof. Fernando Lund	Chile	2004	
Prof. Keith Moffatt	UK	2004	Chairman Member of XCCC
Prof. Peter A. Monkewitz	Switzerland	2004	
Prof. Rene Moreau	France	2004	Member of XCCC Representative of HYDROMAG
Prof. Bahadur Nakra	India	2002	
Prof. Tinsley Oden	USA	2002	Representative of IACM
Prof. Niels Olhoff	Denmark	2004	Member of XCCC
Prof. Timothy Pedley	UK	2004	Secretary Member of XCCC
Prof. Bernhard Schrefler	Italy	2002	Member of XCCC
Prof. Kazimierz Sobczyk	Poland	2002	
Prof. Pierre Suquet	France	2004	

<i>Member</i>	<i>Country</i>	<i>Year*</i>	<i>Remarks</i>
Prof. Roger Tanner	Australia	2002	
Prof. Eiichi Watanabe	Japan	2002	
Prof. Feng-Gan Zhuang	China	2004	

*Year where stated, indicates end of term (applies to members elected after 1972)

Members of the Symposia Panels

The Bureau of IUTAM in 1977 set up two panels charged with the duty of scanning proposals made for IUTAM–Symposia in the fields of fluid and solid mechanics.

In 1992 that duty was extended to include scanning of proposals for IUTAM–Summer Schools.

The following members have been elected in 2000 for the period up to and including the 2004 meeting of the General Assembly

Fluid Mechanics

Prof. Patrick Huerre

Prof. Tsutomu Kambe

Prof. Egon Krause

Prof. Gary Leal

Prof. D. Howell Peregrine

Solid Mechanics

Prof. Jan D. Achenbach

Prof. Felix Chernousko

Prof. Wolfgang Ehlers

Prof. Viggo Tvergaard

Prof. John Willis

Donations in 2001

Donations given to IUTAM Symposia are recorded under the heading “Financial Support” of the Reports of Symposia and Summer Schools held in 2001.

IUTAM is grateful to UNESCO and ICSU for providing a grant of \$ 4,000 for the support of the following activities:

Summer School on Hierarchical Structure and Modeling of Turbulence,
Beijing, China, August 3-9, 2001;

New IUTAM Website.

IUTAM Representation in ICSU and its Scientific Committees

<i>Acronym</i>	<i>Organization/Scientific Committee</i>	<i>Representative of IUTAM</i>
ICSU	International Council for Science	Prof. H. K. Moffatt
COSPAR	Committee on Space Research	Prof. G. G. Cheryni
COSTED	Committee on Science and Technology in Developing Countries	Prof. R. Narasimha
SCOPE	Scientific Committee on Problems of the Environment	Prof. G. M. Lespinard
SCOR	Scientific Committee on Oceanic Research	Prof. W. Fennel

Reports of IUTAM Symposia held in 2001

01-1 IUTAM Symposium on Flow in Collapsible Tubes and Past Other Highly Compliant Boundaries, Warwick, Coventry, UK, March 26-30, 2001

a) Scientific Committee

P.W. Carpenter (UK, Co-Chair), T.J. Pedley (UK, Co-Chair), V.V. Babenko (Ukraine), R. Bannasch (Germany), C.D. Bertram (Australia), M. Gad-el-Hak (USA), J.B. Grotberg (USA), R.D. Kamm (USA), Y. Matsuzaki (Japan), P.K. Sen (India), L. van Wijngaarden (Netherlands, IUTAM repres.), K.S. Yeo (Singapore)

b) Short summary of scientific progress achieved

There are many physiological examples of compliant tubes, which collapse when the intramural pressure difference falls below a critical value. The cross-sectional area of such tubes varies significantly in response to the internal flow dynamics (e.g. veins above the heart, arteries under a cuff, large airways in forced expiration, urethra during micturition, etc.). More generally there are many biomechanical, biological and engineering examples of external and internal flows past highly compliant boundaries (e.g. mechanics of snoring, pressure propagation in cerebrospinal fluid, hydrodynamics of dolphins and other animals, drag reduction, process engineering, structure-borne sound).

The underlying physical phenomena and mathematical modeling have much in common with flow in collapsible tubes. Nevertheless, there had been little interchange of ideas between the researchers working in the various areas. It was a major aim of the Symposium to bring the two main research communities together in order to stimulate fresh thinking and fruitful discussions. In this respect the Symposium was very successful.

The laboratory experiments on collapsible tubes reviewed and presented at the Symposium revealed a rich variety of self-excited oscillations, indicating a complex underlying dynamical system. The current theoretical and computational models were also reviewed and recent progress and new ideas presented. There were lively discussions, with notable contributions from both research communities, about the origins and sustaining mechanisms of these oscillations. Also new biomedical applications of collapsible tubes were presented. Progress has evidently been made towards a capability to undertake unsteady, three-dimensional numerical simulations of the flow through collapsible tubes. But this has not yet been fully achieved. Such simulations would be a valuable scientific tool and would represent a major advance.

It was also evident from the work presented at the Symposium that much progress has been made towards a fuller understanding of the interactions of fluid flows with highly compliant boundaries, particularly for flows through non-collapsible compliant tubes. But many unanswered questions still remain. Chief amongst these is the question of the effects of wall compliance on turbulent shear stress and intensity. Experimental work on this was presented together with associated semi-empirical modeling, and along with some promising new theoretical approaches. Nevertheless fundamental understanding still eludes us.

c) Countries represented and number of participants

Australia (1), France (7), India (2), Japan (4), Netherlands (1), Russia (6), Singapore (1), Ukraine (1), UK (24), USA (5)

d) Publication of Proceedings of the Symposium

We intend to do something somewhat different from the normal proceedings. After consultations with the Scientific Committee, we consider that a more useful contribution to IUTAM and science in general would be to produce a Symposium book summarizing the state of the art for the Symposium's research field. The discussions and information exchanged during the Symposium suggest that such an overview would be timely. To this end 15 themes have been selected, each corresponding to approximately 20-page chapters, and selected participants have been invited to produce reviews of these themes. The reviews are expected to reflect the latest work and progress that emerged during the Symposium.

e) Financial support

Generous financial support contributed to the success of the Symposium. The following sponsors are gratefully acknowledged:

- International Union of Theoretical and Applied Mechanics
- UK Defence and Evaluation Research Agency
- Kluwer Academic Publishers
- University of Warwick

f) Scientific program

Originally Prof. J. Grothberg agreed to be our keynote speaker for the biomechanics/collapsible-tubes theme. Owing to his wife's illness he was obliged to withdraw at fairly short notice and Dr. Heil agreed to give the keynote lecture instead.

Session 1: Flow in Collapsible Tubes

T.J. Pedley/P.W. Carpenter (Welcome)

M. Heil (Keynote Lecture), *Flow in collapsible tubes: The biomechanics perspective.*

R.A. Scroggs, E.A. Patterson and **S.B.M. Beck**, *Numerical fluid-structure interaction model of a collapsible tube using LS-DYNA.*

Session 2: Effects of wall compliance on boundary-layer stability

V.V. Babenko, External and internal flows on elastic surfaces.

A. Cros, R. Ali, L. Schouveiler, **P.J. Thomas**, P. LeGal, M.P. Chauve, P.W. Carpenter and C. Davies, *Transition of torsional Couette flow between a compliant rotating disk and a stationary rigid wall.*

S. Manuilovich, *Propagation of Tollmien-Schlichting waves in a boundary layer over a flexible path of a wall.*

M. Gad-el-Hak (Keynote Lecture), *Compliant coatings: What works and what doesn't?*

Session 3: Effects of wall compliance on turbulence

K.S. Choi, E. Le-Huu-Nho, B.R. Clayton and M.P. Escudier, *Turbulent boundary-layer structure over a compliant surface.*

K.S. Yeo, H.Z. Zhao and B.C. Khoo, *Turbulent flow over a compliant surface – wave instabilities.*

L. Parsons, D. Rempfer and J.L. Lumley, *Low-dimensional model of the interaction of near-wall turbulence with a compliant boundary.*

S. Xu, D. Rempfer and J.L. Lumley, *Direct numerical simulation of the interaction of near-wall turbulence with a compliant wall.*

V.M. Kulik and S.L. Morozova, *Response of a compliant coating to fluctuating wall pressure.*

Session 4: Collapsible tubes

K. Ohba, T. Kamimura, K. Bando and K. Hanazono, *Distribution of flow velocity and pressure in a largely deformed collapsible tube.*

Z.X. Cai, X.Y. Luo and T.J. Pedley, *A localized asymptotic solution for a fluid-beam problem.*

Z.X. Cai and **X.Y. Luo**, *A fluid-beam model for collapsible channel flow.*

Session 5: Biomechanical applications

M. Heil and J.P. White, *Airway closure: surface-tension-driven non-axisymmetric instabilities of liquid-lined elastic tubes.*

M. Bathe, A. Shirai and **R.D. Kamm**, *Numerical simulation of Neutrophils and other highly compliant cells.*

Session 6: Flow-induced waves over flexible walls

P.K. Sen, P.W. Carpenter, J.S.B. Gajjar and S. Hegde, *The jump conditions for instability waves at a rigid-compliant joint.*

C. Davies and P.W. Carpenter, *Numerical simulation of instabilities in boundary-layers over a compliant wall.*

N. Peake, *Nonlinear stability of a fluid-loaded elastic plate with mean flow.*

E. de Langre, *The effect of structural characteristics on the onset of absolute instability in compliant structures submitted to in viscid flow.*

A.D. Lucey, *Wave excitation and the destabilisation of a flexible surface by a uniform mean flow.*

Session 7: Internal flows over compliant walls

M. Gad-el-Hak and M. Hamadiche, *Temporal stability of flow through viscoelastic tubes.*

J.S.B. Gajjar, A. Gibson and P.K. Sen, *Instabilities in compliant pipe and related flows.*

S. Koga and **M. Nagata**, *Stability of Couette flow with a compliant cylinder.*

V. Kumaran, *Classification of instabilities in the flow past flexible surfaces.*

U. Ehrenstein, *Local and global stability behaviour in a boundary-layer flow with compliant coatings.*

Session 8: Turbulent flow over compliant walls

V.P. Reutov and G.V. Rybushkina, *Nonlinear dynamics of hydro elastic waves in a turbulent boundary-layer flow past compliant wall.*

E.R. Fitzgerald, *Influence of viscoelastic material properties on turbulent flow past thin compliant coatings.*

M. Tamarasan and K.-S. Choi, *Drag reduction in turbulent pipe flows using compliant coating.*

B.N. Semenov, *Interference action of compliant boundaries on flow in collapsible tubes.*

P.W. Carpenter, *Does the dolphin have a secret? The hydrodynamics of dolphin skin revisited.*

Session 9: Collapsible tubes

C.D. Bertram and N.S.J. Elliott, *Comparison of flow limitation in one tapered and two uniform collapsed tubes.*

M. Hamadiche and M. Gad-el-Hak, *Stability of collapsible ducts.*

Session 10: Biomechanics applications

Y. Matsuzaki, M. Watanabe, **T. Aomatsu** and T. Ikeda, *Experiment on flow in a two-dimensional channel with an obstruction oscillating in high frequency: Preliminary study.*

J.L. van Leeuwen and C.P.H. Elemans, *A biomechanical model of vocalisation in birds.*

T.S. Balint and A.D. Lucey, *Instability of a flexible cantilevered plate in plane channel flow.*

K. Berkouk, P.W. Carpenter and A.D. Lucey, *Pressure propagation in the spinal CSF system.*

Session 11: Collapsible tubes

O.E. Jensen, *Self-excited oscillations in an elastic-walled channel: insights from a simple asymptotic model.*

B.S. Brook and T.J. Pedley, *The effect of non-uniform mechanical and elastic properties on steady and time-dependent flow in (Giraffe jugular) veins.*

J.C. Guneratne, G. Picard and **T.J. Pedley**, *High-Reynolds-number asymptotics for flow in collapsible channels and tubes.*

Closing discussion

Report composed by P.W. Carpenter

**01-2 IUTAM Symposium on Material Instabilities and the Effect of
Microstructure
Austin, Texas, USA, May 7-11, 2001**

a) Scientific Committee

S. Kyriakides (USA, Co-Chair), N. Triantafyllidis (USA, Co-Chair),
R. de Borst (Netherlands), E. Byskov (Denmark), H.-B. Mühlhaus (Australia),
S.Q. Nguyen (France), B. Freund (USA, IUTAM repres.), O. Richmond (USA),
Y. Tomita (Japan), I. Vardoulakis (Greece)

b) Short summary of scientific progress achieved

Instability plays a crucial role in the design of solids and structures as it often limits their performance from their manufacturing stage to their installation and operation. During the last decade, this classical subject has received a new impetus from investigations at the material level. As in the more classical problems, such instabilities are governed by nonlinear interaction of geometry and material properties, which here are related to the microstructure of the material. The International Union of Theoretical and Applied Mechanics (IUTAM), recognizing the vitality of this field of solid mechanics, selected the University of Texas at Austin to host the special symposium on Material Instability and the Effect of Microstructure.

The symposium was held during May 7-11, 2001 at the Thompson Conference Center on the Campus of the University of Texas. It was conducted in the single session format of IUTAM Symposia. The symposium involved a very international group of experts selected by the scientific committee to present their work on instability in a wide variety of material systems including metals, polymers, soils/granular materials, concrete, composites, active materials, cellular materials, etc. Theoretical, experimental and numerical aspects of how microstructure affects material instabilities were addressed. The varied backgrounds of the participants generated an exciting atmosphere for technical exchange on the latest advances in the field. Thirty-nine oral presentations were delivered during the five days of the symposium.

c) Countries represented and number of participants

The symposium had 65 participants, which included 6 University of Texas scientists and graduate students. The participants represented the following 14 countries: Australia, Belgium, Canada, Denmark, France, Germany, Greece, Hong Kong, Italy, Japan, Netherlands, Romania, UK, and USA.

d) Publication of Proceedings of the Symposium

The proceedings of the symposium will be published as a special issue of the International Journal of Solids and Structures with the two co-chairs of the symposium

acting as guest editors. Thirty-two manuscripts have been peer-reviewed in accordance with the editorial policies of the journal. The revised papers have been submitted to Elsevier and the processing of the volume is in progress. The volume is expected to be in print in July 2002. Hardbound volumes will be distributed to the participants, the IUTAM and the sponsors of the symposium soon after this date.

e) Financial support

The symposium received financial assistance from the following organizations:

- Air Force Office of Scientific Research, Directorate of Aerospace & Materials Science
- General Motors Corporation
- International Union of Theoretical and Applied Mechanics
- National Science Foundation, Mechanics and Materials Program

f) Scientific program

S. Kyriakides/N. Triantafyllidis (Opening ceremony)

B. Streetman (Welcome)

Opening lecture

J.W. Rudnicki, Instabilities in compacting geological materials.

Session 1

I. Vardoulakis, *Thermo-poro-mechanics of fault shearing.*

C. di Prisco, *Static liquefaction of a saturated sand stratum.*

N. Ohno, D. Okumura, H. Noguchi, *Stability of microscopic buckling modes of honeycombs subject to in-plane biaxial compression.*

Session 2

G. N. Wells, R. de Borst, L. J. Sluys, *A numerical approach for the transition from continua to discontinua in softening elasto-plastic solids.*

Yoshihiro Tomita, *Characterization of micro- to macroscopic response of polymers containing second-phase particles under macroscopically uniform deformation.*

Session 3

E. van der Giessen, T. Seelig, *Localized plastic deformation in ternary polymer blends.*

C. G'Sell, J. M. Hiver, S. Elkoun, A. Dahoun, *Experimental characterization of cavitation in solid polymers under tension, and its interrelation with necking.*

Session 4

R. Abeyaratne, *On the mobility of compound and type-I twins.*

D. Schryvers, *Changing microstructures in advanced materials studied by transmission electron microscopy.*

Session 5

J. Shaw, R. Elliott, N. Triantafyllidis, *Thermally induced martensitic transformations in atomic lattices.*

C. Făciu, *A rate-type thermo-viscoelastic approach for shape memory alloys.*

A. Vainchtein, *Thermodynamics of martensitic phase transitions and hysteresis.*

Session 6

K. Bhattacharya, P. Purohit, *Dynamics of strings and rods made of phase-transforming material.*

H.-M. Jensen, *Numerical analysis of buckling-driven delamination.*

Session 7

J. Bassani, *Patterning of plastic flow in ductile crystals.*

K. Inal, P. D. Wu, K. W. Neale, *Instabilities and localized deformation phenomena in FCC polycrystals.*

Session 8

J. Desrues, *Shear band analysis and shear moduli calibration.*

P. Lade, *Factors affecting instability of granular materials.*

Session 9

M. Bornert, P. Doumalin, J. Crepin, E. Soppa, *Strain localization in two-phase materials and polycrystals: quantitative experimental investigations and modeling attempts.*

M. Laroussi, K. Sab, A. Alaoui, *Elastic buckling in high strain compression of periodic open cell foams.*

A.M. Cuitino, Y. Wang, G. Gioia, *Inhomogeneous deformation patterns in open cell foams.*

Session 10

Richard Becker, *The role of microstructure in strain localization and fracture.*

V. Tvergaard, J. Hutchinson, *Two mechanisms of ductile fracture: void by void growth versus multiple void interaction.*

Session 11

A. Benallal, C. Comi, *Material instabilities in coupled problems.*

Q.-P. Sun, Z.-Q. Li, *On pattern-forming instability in shape memory alloy micro-tubes and the effect of texture.*

Session 12

T. Tzianetopoulou, M. C. Boyce, *Micromechanics of triblock-copolymer films with lamellar morphology.*

E. Fried, *Disclinations in nematic elastomers.*

Session 13

T. Vogler, S.-Y. Hsu, S. Kyriakides, *The initiation and growth of kink bands in fiber composites.*

L. Leotoing, S. Drapier, A. Vautrin, *Nonlinear interaction of geometrical and material properties in sandwich structure instabilities.*

E. Corona, J.A. Shaw, M. Iadicola, *Buckling steel bars with Lüders bands.*

Session 14

E. Byskov, J. Christoffersen, C. Christensen, J. Poulsen, *Kinkband formation in wood.*

D. Muir Wood, *Some observations of volumetric instabilities in soils.*

Session 15

F. Oka, Y. Higo, S. Kimoto, *Effect of dilatancy on the strain localization of water saturated elasto-viscoplastic soil.*

J.G.M. van Mier, C. Shi, *Stability issues in uniaxial tensile tests on brittle disordered materials.*

Session 16

Y. Leroy, *Folding and faulting of pervasively fractured geological layers.*

H-B. Mühlhaus, L. Moresi, F. Dufour, *A director theory for viscoelastic folding instabilities in multilayered rock*

Session 17

A. Needleman, E. van der Giessen, *Size effects, microstructure and localized slip.*

P. Zhang, Y. Huang, H. Gao, K. C. Hwang, *Mechanics of carbon nano-tubes: a continuum analysis incorporating the interatomic potentials.*

Report composed by S. Kyriakides and N. Triantafyllidis

**01-3 IUTAM Symposium on Turbulent Mixing and Combustion
Kingston, Ontario Canada, June 3-6, 2001**

a) Scientific Committee

A. Pollard (Canada, Co-Chair), S. Candel (France, Co-Chair), J. Ferziger (USA), J.C.R. Hunt (England), N. Peters (USA), S. Pope (USA), A.E. Perry (Australia, deceased), A.V. Johansson (Sweden), T. Takeno (Japan), T. Tatsumi (Japan, IUTAM repres.).

b) Short summary of scientific progress achieved

The goals of the Symposium were to draw together researchers in turbulence and combustion so as to highlight advances and challenge the boundaries to our understanding of turbulent mixing and combustion from both experimental and simulation perspectives; to facilitate cross-fertilization between leaders in these two fields. These goals were noted to be important given that turbulence itself is viewed as the last great problem in classical physics and the addition of chemical reaction amplifies the difficulties enormously.

The quality of the papers, the organization and the salubrious atmosphere of Kingston and Queen's University uniformly impressed the participants. The Symposium was divided into six sessions, each begun with a Keynote lecture. Each session had a theme, from turbulent mixing with no chemical reaction through to turbulent mixing dominated by chemistry. Oral presentations of 20-minutes each followed by brief 5-minute presentations from poster authors followed each Keynote. The final volume will contain reviewed contributions from all sectors (Keynote, oral and poster). The consensus was this Symposium was so dramatically important to our science that a future meeting should be pursued. This symposium, which could be held in 2005 in France, would focus on the dynamics of turbulent mixing and combustion and emphasize large eddy simulations, coupled problems and flow control problems. A proposal will be submitted to IUTAM in 2002.

The Symposium comprised two receptions, one in Ban Righ Hall and the other at the Kingston Museum of the Great Lakes. Lunches were held in the local yacht club, in the Queen's University Agnes Etherington Art Gallery and the stately Wallace Hall. The Symposium banquet was held in the atmosphere of 1812 within the mess of Kingston's historic Fort Henry. A final wrap up party was held in the University Club.

c) Countries represented and number of participants

Japan (6), France (23), Canada (23), USA (23), Germany (1), Netherlands (1), Italy (2), Norway (1), Russia (1), United Kingdom (2), Sweden (1)

d) Publication of Proceedings of the Symposium

The proceedings will be published by Kluwer Academic Publishers in 2002 (editors: A. Pollard and S. Candel)

e) Financial support

Financial support for the Symposium was generously provided by:

- International Union of Theoretical and Applied Mechanics
- The National Research Council of Canada
- Natural Resources Canada
- CANMET Energy Technology Centre
- Queen's University at Kingston
- The Centre for Advanced Gas Combustion Technology
- Queen's University and the Canadian Gas Association.

f) Scientific program**Opening and Welcome:**

A. Pollard (co-Chair), S. Candel (co-Chair), B. Hutchinson, T. Harris, T. Tatsumi (IUTAM repres.)

Session 1:**Keynote Lecture**

E. Villermaux, *Mixing as an Aggregation Process.*

Oral presentations

Jung, Gamard, Woodward, George, *Further investigation of the jet mixing layer using a 138 hot-wire probe and the POD.*

Brethouwer and Nieuwstadt, *On the behaviour and the characteristics of scalar gradients in isotropic turbulence.*

Blossey, Narayanan, Bewley, *Dynamics and control of a jet in a cross-flow: direct numerical simulations and experiments.*

Mesnier, Blanchard, Sarn and Gokalp, *PIV measurements of the near field of a variable density turbulent jets: a comparison between a circular jet and a rectangular jet.*

Okong'o and Bellan, *Characteristics of supercritical transitional mixing layers.*

Posters presentations

Ewing and Woodward, *On accurate experimental measurements of the dynamics of large scale structures in turbulent flows.*

Sigurdson and Diep, *Mixing in a cross-jet enhanced by a coaxial annular synthetic jet.*

Marrot, Biscos, Gajan and Pauzin, *Pulse injection of droplets in vortical structures.*

Zapryagaev, Kisilev and Solotchin, *Experimental investigation of the streamwise vortices in the mixing layer of the supersonic underexpanded jet.*

Session 2:

Keynote Lecture

P. Dimotakis, *Challenges in Turbulent Mixing with Combustion.*

Oral presentations

Hewson, Echekki and Kerstein, *One-dimensional stochastic simulation of advection-diffusion-reaction couplings in turbulent combustion.*

Livescu and Madnia, *Compressibility effects on the scalar mixing in reacting homogeneous turbulence.*

Crecco, Vezzani, Giammartini and Romano, *Experiments on the velocity and concentration fields at the outlet of a Bunsen without and with combustion.*

Sarkar and Pantano, *The interaction of scalar mixing and reaction rate in a reacting shear layer.*

Gicquel, Hilbert, Thevenin and Darabiha, *Influence of differential diffusion on local equilibrium and super-adiabatic combustion in turbulent non-premixed flames.*

Poster presentations

Boulanger and Vervisch, *Effect of transverse heat fluxes in diffusion flame quenching.*

Helie and Trouve (Best Poster Award), *A model description of the effects of variable fuel-air mixture composition on turbulent flame propagation.*

Zhou, Zimmerman and Burke, *Formulation of a two scale transport scheme for turbulent mixing induced by Rayleigh-Taylor and Richtmyer-Meshkov instabilities.*

Session 3

Keynote Lecture

C. Meneveau, *Challenges in modeling scalars in turbulence and LES: anisotropy, dynamic models and scale separation.*

Oral presentations

Ferchicki and Tavoularis, *PDF of Temperature fluctuations in uniformly sheared turbulence.*

Moreau, Elmo, Bertoglio, *A priori tests of subgrid models for the scalar fluctuation in statistically stationary isotropic turbulence.*

Lardjane, Fedious, Gokalp, *Evaluation of sub-grid scale magnitude in LES of large density ratio mixing layers.*

Bourlioux, Majda, *A mathematical prototype to validate LES strategies for turbulent flames.*

Szasz, Caraeni and Fuchs, *Effects of differential diffusion in turbulent jet flows.*

Poster presentations

Knikker and Veynante, *A sub-grid scale flame surface density similarity model for large eddy simulations of turbulent premixed combustion.*

Sapede, Harion, Caillat and Baudoin, *Coaxial rectangular jet with density differences – numerical simulations versus experimental data.*

Benaissa, Amiehl, Anselmet and Lemay, *Local interaction between dynamic and scalar structures in variable density turbulent jets.*

Session 4:**Keynote Lecture**

L. Vervisch, *LES of partially premixed combustion.*

Oral presentations

Hilbert, Thevenin, *Turbulent non-premixed flames investigated using direct numerical simulations with detailed chemistry.*

Givi, Gicquel, Jaber, Pope, *PDF methods for large eddy simulation of turbulence reactive flows.*

Tullis, Cant, *Scalar transport effects in large eddy simulation of premixed turbulent flames.*

Tanahashi, Ito, Fujimora, Miyauchi, *Local flame structure in hydrogen-air turbulent premixed flames.*

Thevenin, Hilbert, Gicquel, *Three dimensional direct simulations of turbulent flames using realistic chemistry modeling.*

Poster presentations

De Charentenay, Thevenin and Zamuner, *Simulation of buoyancy driven diffusion flame.*

Tanq and Pope, *Accurate and efficient implementation of combustion chemistry using in-situ adaptive tabulation with dimension reduction.*

Johnson and Kostiuik (Best Poster Award), *Imaging of the fuel stripping mechanism for wake stabilized diffusion flames in a cross flow.*

Session 5**Keynote Lecture**

P. Moin, *Progress in control of mixing and LES of combustion.*

Oral presentations

Legier, Varoquie, Lacas, Poinot, Veynante, *Large eddy simulation of a non-premixed turbulent burner using a dynamically thickened flame model.*

Guilini, Gajan, Diers, Biscos, *Characterisation of an air-blast injection device with forced periodic entries.*

Mizobuchi, Takaki, Tachibana, Ogawa, *Numerical analysis of hydrogen-air jet diffusion flame.*

Ben Dakhli, Charentenay and Giovangigli, *Turbulent mixing with sprays.*

Poster presentations

Ducruix, Poinso and Candel, *Large eddy simulations of combustion instabilities in a swirled combustor.*

Weydahl, Gran and Ertesvag, *Prediction of nitric oxide formation in ammonia doped turbulent syngas jet flames*

Choi, Kastumoto, Nakabe and Suzuki, *An experimental investigation of mixing and combustion characteristics on the can-type micro-combustor with a multi-jet baffle plate.*

Pollard and McIlwain, *Effects of single, dual and quadruple tabs on the near field of round jets.*

Session 6**Keynote Lecture**

J. Janicka, *Turbulent mixing and combustion: Perspectives.*

Oral presentations

Poinso, *Using large eddy simulations to understand combustion instabilities in gas turbines.*

Lentini, *Improved modeling of the N₂O pathway contribution to NO_x in non-premixed turbulent flames.*

Sankaran, Menon, *Subgrid combustion modeling of two-phase reacting flows.*

Jimenez, Cuenot, Poinso, Haworth, Blint, *Numerical simulation of propane-air combustion in stratified premixed conditions.*

Poster presentations

Tchernyshyev, Kharitonov and Lokotko, *Intensification of mixing processes in supersonic flows in a model of a rocket scramjet engine.*

Juniper, Tripathi, Scouflaire, Rolon and Candel, *Turbulent combustion of sprays under super-critical conditions.*

Suk, Sullivan and Fetter, *Experimental investigation of reciprocating flow in a water engine.*

Vereschagin, *CARS diagnostics of turbulent mixing and combustion.*

Report composed by A. Pollard and S. Candel

**01-4 IUTAM Symposium on Micromechanics of Martensitic Phase Transformation in Solids
Hong Kong, June 11-15, 2001**

a) Scientific Committee

Q. P. Sun (Chairman, Hong Kong, China), M. Berveiller (France), O. T. Bruhns (Germany), K. C. Hwang (China), R. D. James (USA), G. B. Olson (USA), J. Ortin (Spain), K. Tanaka (Japan), J. Engelbrecht (Estonia, IUTAM repres.).

b) Short summary of scientific progress achieved

Phase transition phenomena are of vital interest to physicists and material scientists, and to engineers who involve in the study of thermomechanical behavior of solids. The research on mechanics of phase transformations in solids has both academic and technological importance and has become one of the most attractive frontiers in applied mechanics. The wide application of smart materials and structures (such as shape memory alloys, TRIP steels, MEMS) greatly promoted the development of this interdisciplinary subject. The subject is continually growing, and new results in both fundamental and applied research are being constantly reported.

The objective of the Symposium, the first IUTAM Symposium in this emerging area, is to reflect the rapid development and to provide a forum to discuss the latest research advances and future trends in this area. It was the intension of the Scientific Committee to invite leading scientists and researchers from material science, physics and mechanics together to present and to discuss different aspects of this active multi-discipline field. During this 5-day symposium, 34 papers covering seven topics were presented and intensively discussed in the 16 sessions. The seven topics were:

1. Microstructure and deformation of interfaces and moving boundaries;
2. Material instability and its propagation during martensite phase transformation;
3. Behavior of representative volume element by micromechanics approaches;
4. Interaction between plasticity (dislocation) and phase transformation;
5. Martensitic phase transformation in thin films;
6. Size effect and scaling in martensitic phase transformations;
7. Engineering application of phase transformation in bio-materials and medical devices, intelligent materials and structures, TRIP steels, MEMS, shape memory alloys and shape memory polymers, etc.

The open and friendly environment during the Symposium provided an excellent opportunity for intensive discussions and exchanging of ideas among all participants. Also the local research students were involved in the organization of the Symposium and they benefited a lot from this symposium.

c) Countries represented and number of participants

Austria (1), Australia (1), China (9), Czech Republic (1), Estonia (2), France (5), Germany (2), Italy (1), Japan (6), Singapore (2), UK (1), USA (8)
(Not including local graduate students and research staff)

d) Publication of Proceedings of the Symposium

An extended abstract booklet was distributed at the Symposium.
The full-length papers presented at the Symposium will be published by Kluwer Academic Publishers in 2002 (editor: Q. P. Sun).

e) Financial support

The organizers extend their thanks to the following for sponsorship of this IUTAM Symposium:

- International Union of Theoretical and Applied Mechanics
- Research Grant Council of Hong Kong SAR, China
- US Army Research Office-Far East
- National Natural Science Foundation of China
- Kluwer Academic Publishers, Correct
- School of Engineering, Hong Kong University of Science and Technology
- Hong Kong Society of Theoretical and Applied Mechanics
- Hysitron, Inc. USA

f) Scientific program**Opening and Welcome:**

Q. P. Sun (Chairman), N. Cue and J. Engelbrecht

Session 1

M. Berveiller, M. Cherkaoui (Keynote lecture), *Materials with TRIP effects: Mechanisms and modeling.*

Session 2

Y. Tomita, T. Iwamoto, *Constitutive equation and computational prediction of deformation behavior of TRIP steels under monotonic and cyclic loading.*

A. Berezovski, J. Engelbrecht, G.A. Maugin, *A thermodynamic approach to modeling of stress-induced phase-transition front propagation in solids.*

J.M. Ball, D. Schryvers, *The formation of macrotwins in NiAl martensite.*

Session 3

Y. Liu, *On the deformation mechanism of shape memory alloys.*

D.-N. Fang, K.-C. Hwang, *Nonlinear electromechanical deformation and fracture related to domain swithing in ferroelectric ceramics.*

Session 4

M. Tokuda, S. Sogino, T. Inaba, *Two-way shape memory effect obtained by training of combined cyclic loading.*

Session 5

K. Bhattacharya (Keynote lecture), *Domain patterns, texture and macroscopic electro-mechanical properties of ferroelectrics.*

C. Lexcellent, C. Bouvet, S. Calloch, *Multiaxial mechanical behavior of a Cu-Al-Be shape memory alloy: Experimental investigations and phenomenological modeling.*

Session 6

H. Tobushi, K. Okumura, M. Endo, S. Hayashi, *Thermomechanical properties of polyurethane-shape memory polymer.*

H. Y. Yu, *A new model for the volume fraction of martensitic transformations.*

X. Ren, *Exotic multi-scale phenomena in shape memory alloys associated with the interaction of point defects with martensitic transformation.*

Session 7

Th. Antretter, F.D. Fischer, P. Fratzl, B. Ortner, G. Cailletaud, K. Tanaka, *The transformation induced plasticity (TRIP) in a martensitically transforming steel subjected to a general loading path.*

C. Messner, E. Werner, Q.P. Sun, G. Reisner, *Free energy of martensitic transformation – from discrete to homogeneous microstructure.*

Session 8

H. Sehitoglu et al., *Single crystal deformation mechanisms in NiTi, NiTiCu And Fe-based shape memory alloys.*

B. Wang, Z. Xiao, *Dependence of energy release rate on the propagation speed of martensitic transformation in materials.*

A Roytburd and E. Patoor (Chairmen) *Round table discussion on future research directions.*

Session 9

A. Roytburd (Keynote lecture) *Martensitic transformation in constrained films.*

Session 10

E. Patoor, C. Niclaey, S. Arbab Chirani, T. Ben Zineb, *Influence of microstructural parameters on shape memory alloys behavior.*

H. Tsai, X. Fan, *Elastic deformations in shape memory alloy fiber reinforced composites.*
J. Slutsker, A. Roytburd, *Modeling of superelastic adaptive composites.*

Session 11

Y. Liu, *Influence of plasticity on transformation behaviour of martensite in NiTi.*
W.M. Huang, J.J. Zhu, K.M. Liew, *On the description of transformation in DO3 to 18R shape memory alloys using group theory.*

Session 12

Y.C. Shu, *Pressurized heterogeneous thin films of martensitic materials.*
P. Šittner, V. Novák, P. Lukáš, M. Daymond, *Load partitioning among grains of martensitically transforming shape memory alloy polycrystals studied by in-situ neutron diffraction.*

Session 13

S. Miyazaki (Keynote lecture), *Ti-Ni sputter-deposited SMA thin films and their applications.*
O.T. Bruhns, C. Oberste-Brandenburg, *On the description of martensitic phase transformations using tensorial transformation kinetics.*

Session 14

D. Favier, L. Orgeas, Y. Liu, G. Rio, *Mechanical instability of NiTi in tension, compression and shear.*
H.-H. Dai, Q. Bi, *Phase transition phenomena of a hyperelastic rod subjected to static load.*
W. Cao, R. Ahaluwalia, *Theoretical study of heterogeneous nucleation in martensitic phase transition.*

Session 15

P. Tong, D. C. C. Lam, Q. P. Sun, *Phase transformation of thin wires in tension.*

W. Yang, F. Fang, H.T. Wang, Y.Q. Cui, *Unconventional domain bands near a crack tip in ferroelectrics.*

Session 16

D. Bernardini, *A macroscopic model for microscopically heterogeneous shape memory alloys.*

Q.P. Sun, *Effect of microstructure on the deformation of nano-grained polycrystalline NiTi wires, thin sheets and microtubes.*

Report composed by Q.P. Sun

01-5 IUTAM Symposium on Analytical and Computational Fracture Mechanics of Non-homogeneous Materials, Cardiff University, UK, June 18-22 2001

a) Scientific Committee

Z.P. Bažant (USA), R. de Borst (Netherlands), L.B. Freund (USA, IUTAM repres.), K.-C. Hwang (PR China), A.R. Ingraffea (USA), B.L. Karihaloo (UK, Chairman), J.-B. Leblond (France), G. Maier (Italy), Z. Mroz (Poland), H.-B. Mühlhaus (Australia), J.R. Willis (UK).

b) Short summary of scientific progress achieved

This Symposium was convened to address topical issues in analytical and computational aspects of the fracture of non-homogeneous materials as they are approached by specialists in mechanics, materials science and related fields. The range of non-homogeneous materials was limited to those that are inhomogeneous at the macroscopic level and/or exhibit strain softening, covering materials such as rock, concrete, ceramics and composites on the one hand, and, on the other, those metallic materials whose ductile fracture is strongly influenced by the presence of inhomogeneities.

There were five days of invited presentations on fundamental research issues with many common features among seemingly disparate non-homogeneous materials. Presentations emphasized many aspects, including experimental observation, ranging from the role of inhomogeneities, interfacial fracture, scaling laws and non-local effects.

Micromechanical modeling, macroscopic analysis that reveals underlying micromechanisms of fracture, lattice modeling, and methods based on non-local and gradient theories were expounded.

A special feature of the Symposium was the opportunity provided to young researchers to make 15-minute presentations. Judging by the response of the participants the Symposium achieved its aims admirably.

c) Countries represented and number of participants

Australia (4), Austria (2), PR China (3), Denmark (4), France (5), Germany (4), Greece (1), Israel (3), Italy (6), Japan (4), Netherlands (4), Poland (3), Russia (5), Spain (1), United Kingdom (21), United States (9)

d) Publication of Proceedings of the Symposium

The Proceedings comprising reviewed Symposium papers will be published by Kluwer Academic Publishers by mid-2002 (Editor: B.L. Karihaloo).

e) Financial support

Financial support for the Symposium was generously provided by the following organizations:

- International Union of Theoretical and Applied Mechanics
- Innovation Centre of Welsh Development Agency (WDA)
- Cardiff University

f) Scientific program**Session 1**

A. Kelly, *Poisson's number*.

Session 2

L. Banks-Sills, *Conservative integrals for calculating stress intensity factors in bimaterial bodies*.

H.L. Schreyer, *Features and ellipticity analysis of a discrete constitutive equation*.

D. Leguillon, *Finite fracture mechanics, Application to the onset of a crack at a bimaterial corner*.

D.H. Chen, K. Ushijima, *Elastic-plastic stress singularity near a bonded interface*.

D. Garagash, E. Detournay, *Viscosity-dominated regime of a fluid-driven fracture in an elastic medium*.

Session 3

L.N. McCartney, *Modeling failure mechanisms in laminated composites*.

A. Carpinteri, G. Ferro, G. Ventura, *The influence of fiber on the structural response of reinforced concrete beams*.

Y. Estrin, A.V. Dyskin, A.J. Kanel-Belov, E. Pasternak, *Materials with novel architectonics: assemblies of interlocked elements*.

G. Mishuris, G. Kuhn, *Asymptotics of elastic field near the tip of interface crack under nonclassical transmission conditions*.

Session 4

F.M. Borodich, *Scaling in multiple fracture and size effect*.

A.V. Dyskin, *Mechanics of fractal materials*.

M.M. Davydova, *Fractal aspects of fracture simulation*.

A. Feraille-Fresnet, A. Ehlacher, *Filling of a circular crack with two non-miscible fluids*.

V. Petrova, *Macro-microcrack interaction taking into account crack closure*.

Session 5

C. Atkinson, I. Bradford, *Effect of inhomogeneous rock properties on the stability of wellbores.*

H.B. Mühlhaus, L. Moresi, F. Dufour, *The interplay of material and geometric instabilities in large deformations of viscous rock.*

H. Horii, E. Puntel, *Rate dependent softening law for shear crack and unstable crack growth in geological materials.*

E. Pasternak, A.V. Dyskin, H.B. Mühlhaus, *Fractures and defects in Cosserat Continua modeling layered materials.*

L. Germanovich, R. Chanpura, *Modeling hydrocarbon reservoirs by discontinuities in poroelastic material.*

Session 6

J.F. Knott, *Cleavage fracture in "heterogeneous" steel microstructures.*

D.A. Scarth, E. Smith, *Modeling delayed hydride cracking in zirconium alloys.*

T. Cretegy, E. Iesulauro, C.S. Chen, C. Myers, J. Sethna, A.R. Ingraffea, *Mixed continuum-atomistic modeling for crack growth in polycrystals.*

J.P. Dempsey, *The viscoelastic fracture and indentation of sea ice.*

Session 7

T. Belytschko, M. Moes, A. Gravouil, *Arbitrary cracks by the extended finite element method and level sets.*

R. Lackner, H.A. Mang, *Modeling of early-age fracture of shotcrete: application to tunneling.*

G. Cocchetti, G. Maier, X. Shen, *Simulation of hydraulic fracture along the concrete-rock interface in gravity dams.*

Session 8

Z. Mroz, N. Bialas, *Modeling of progressive interface failure under monotonic and cyclic loading.*

J. Frelat, J.B. Leblond, *Crack kinking from an initially closed interface crack in the presence of friction.*

A. Corigliano, *Elasto-plastic interface laws for non-homogeneous materials: formulation, sensitivity analysis and parameter identification.*

D. Zeng, N. Katsube, W.O. Soboyejo, *Analytical and discrete modeling of transformation toughening.*

Session 9

R. Luciano, J.R. Willis, *Non-local constitutive response and associated boundary conditions for a randomly heterogeneous medium.*

A. Needleman, *Dynamic crack growth along interfaces.*

G. Borino, C. Polizzotto, *A thermodynamic plasticity formulation with local and non-local internal variables.*

X. Zhang, Y.W. Mai, *Multi-scale energy release rate in dynamic crack growth of strain-softening materials.*

Session 10

G.N. Wells, R. de Borst, L.J. Sluys, *A new numerical approach to strain localisation.*
P. Steinmann, D. Ackermann, F.J. Barth, *Material forces in computational fracture mechanics.*

A. Zervos, P. Papanastasiou, I. Vardoulakis, *Shear localization in thick-walled cylinders under internal pressure based on gradient elastoplasticity.*

Session 11

J. Fang, J.X. Wang, M. Li, C.Y. Xiong, J. Zhang, *Damage and fracture study of non-homogeneous materials by image correlation computations.*

R. Pyrz, *Fibre failure due to thermal residual stresses in model polymer based composites.*

A. Rabinovitch, V. Frid, D. Bahat, J. Goldbaum, *A new method to obtain crack surface areas from electromagnetic radiation emitted in fracture.*

E.K. Gamstedt, T.K. Jacobsen, B.F. Sørensen, *Determination of cohesive laws for materials exhibiting large scale damage zones.*

Session 12

F.J. Ulm, E.C. Silva, *Biochemomechanics of biological resorption processes in heterogeneous materials.*

J. Ozbolt, *Numerical study of mixed-mode fracture in concrete structures.*

A.D. Jefferson, *Thermodynamics of a multi component crack model.*

D. Pivonka, R. Lackner, H.A. Mang, *Failure assessment of anchor bolts by means of nonlinear finite element analysis.*

M. Cuomo, *An interface model for fibre reinforced concrete.*

Z. Mroz, T. Sadowski, S. Samborski, *Gradual degradation of initially porous polycrystalline ceramics subjected to quasi-static tension.*

Session 13

V. Tvergaard, *3D studies of ductile failure in particulate reinforced metals.*

C. Gonzalez, J. Llorca, *Modeling deformation and damage in particle-reinforced composites: the effect of superposed hydrostatic pressure.*

A. Delaplace, G. Pijaudier-Cabot, S. Roux, *Understanding failure of heterogeneous materials from the analysis of discrete disordered systems.*

Session 14

A.B. Movchan, V.V. ZalipaeV, *An asymptotic model of non-destructive testing for porous media.*

S.W. Yu, G.F. Wang, X.Q. Fen, Y.L. Kang, *Analysis of the effects of shear and rotation on the mechanical behaviour of interphase by using strain gradient theory.*

T.K. Jacobsen, B.F. Sørensen, E.K. Gamstedt, *Modeling of R-curves from measured bridging laws.*

E.I. Ryzhak, *Localized instability: what is it, and is it indispensable when possible?*

L.V. Nikitin, V.N. Odinstev, *Fracture of compressed gas bearing microinhomogeneous medium.*

Session 15

S. Roux, *Quasi-static crack propagation in brittle heterogeneous materials.*

G. Lilliu, J.G.M. van Mier, *Analysis of three-dimensional crack propagation in random lattice studies with particle overlay.*

N. Madhusudhan, T.N. Singh, *A novel technique for the generation of failure criteria for jointed rock.*

A. Pegushin, *Nonlinear wave propagation in porous materials.*

B.L. Karihaloo, R. Ince, A. Arslan, *An improved lattice model for fracture of concrete.*

Report composed by B.L. Karihaloo

**01-6 IUTAM Symposium on Computational Mechanics of Solid Materials at Large Strains
University of Stuttgart, August 20-24, 2001**

a) Scientific Committee

C. Miehe (Germany, Chairman), R. de Borst (Netherlands), J. Engelbrecht (Estonia, IUTAM repres.), T. Inoue (Japan), M. Kleiber (Poland), A. Needleman (USA), M. Ortiz (USA), D.R.J. Owen (UK), A. Zaoui (France), F. Ziegler (Austria)

b) Short summary of scientific progress achieved

Computational methods and simulation techniques play a central role in advancing the understanding of complex material behavior. In recent years, many important achievements have been made in the field of the theoretical formulation, the mathematical analysis and the numerical implementation of finite deformation processes in solids.

The aim of the symposium was to give a state of the art and a survey about recent developments in this field and to create perspectives for future research trends. It provided a forum for the interaction among young and established researchers from solid mechanics, applied mathematics and materials science.

About 100 researchers from 14 different nations attended the presentations and took actively part in discussions. The scientific program consisted of 45 lectures given by leading international scientists.

They covered the fields of

- . theoretical and computational approaches to the modeling of large-strain elastic and inelastic deformations of solids applied to metals, polymers and geomaterials,
- . mathematical analysis of finite inelastic deformations of solids, incremental variational formulations, treatment of non-convex problems and microstructures,
- . alternative continuous and discrete micromechanical approaches to deformation mechanisms in solid materials on different phenomenological scales,
- . homogenization methods and adaptive computational tools for the determination of effective overall properties of heterogeneous materials such as polycrystals, composites and granular materials,
- . simulation of failure mechanisms and material instability phenomena in solids based on non-local descriptions and discrete crack modeling.

The symposium was both a scientific and social success. All presentations matched a high level and initiated lively discussions among the participants. In the last weeks we got many thanks for such an interesting and stimulating event. I would like to pass on this praise to the IUTAM for the generous financial support and for giving me the possibility of organizing this event.

c) Countries represented and number of participants

There have been about 100 participants from the following 14 countries: Germany, United States of America, France, Austria, Netherlands, Estonia, Principality of Liechtenstein, Japan, Poland, United Kingdom, South Africa, Sweden, Czech Republic, Denmark

d) Publication of Proceedings of the Symposium

The Proceedings will be published by Kluwer Academic Publishers.

e) Financial support

The IUTAM grant of \$ 5000 was spent on reimbursement of traveling expenses. In the run-up to the conference many industrial companies could be convinced to support this IUTAM Symposium as sponsors. Thanks to them, an attractive social program could also be offered.

f) Scientific program

Session 1: Advanced applications

D. Fritsch, W. Ressel, W. Schiehlen, C. Miehe (Welcome)

H. Rattensperger, J. Eberhardsteiner, **H.A. Mang**, *Numerical investigation of high-pressure hydraulic hoses reinforced with steel wire braid.*

D. Perić, W. Dettmer, E.A. de Souza Neto, *Computational strategies for inelastic solids at large strains: some recent issues with industrial applications.*

Session 2: Crystals and polycrystals, phase transitions

L. Anand (Keynote lecture), *Polycrystalline shape-memory materials: effect of crystallographic texture.*

T. Inoue, P. Ding, S. Imatani, D.-Y. Ju, E. Vries, *Forging simulation incorporating strain-induced phase transformation using the finite volume method.*

E. Nakamachi, *Development of crystal plasticity design system to generate a high-strength and high-formability material.*

Session 3: Convexity properties in elasticity, Microstructures

M. Šilhavý, *Convexity properties and relaxation of isotropic stored energies and sets of deformation gradients.*

A. DeSimone, *Numerical experiments on phase-transforming elastomers.*

J. Schröder, P. Neff, *On the construction of polyconvex, transversely isotropic free energy functions.*

Session 4: Reliability-based analysis, waves, inverse problems

M. Kleiber, J. Rojek, R. Stocki, *Reliability-based analysis of large deformations in metal forming operations.*

J. Engelbrecht, A. Ravasoo, A. Salupere, *Nonlinear waves in solids and the inverse problems.*

Session 5: Foundations of plasticity

O.T. Bruhns, *Objective rates in finite elastoplasticity.*

S. Reese, *Anisotropic elastoplastic material behavior in fabric structures.*

H.D. Alber, *Mathematical analysis of constitutive equations: existence of solutions and collapse theorems.*

Session 6: Variational methods in plasticity, Microstructures II

M. Ortiz (Keynote lecture), *Variational methods in convex and non-convex plasticity.*

K. Hackl, *On the calculation of material microstructures using relaxed energies.*

A. Mielke, *Mathematical modeling of elastoplasticity using a dissipation metric.*

Session 7: Single and polycrystal plasticity, Nonlocal models

S. Nemat-Nasser (Keynote lecture), *Physically-based single and polycrystal plasticity models and their experimental verification.*

A. Needleman, *Localized plastic flow in ductile single crystals: a nonlocal continuum analysis.*

B. Svendsen, *Continuum thermodynamic modeling and simulation of single crystals and polycrystals at large deformation including the effect of geometrically-necessary dislocations.*

Session 8: Heterogeneous Materials

S. Héraud, L. Allais, **H. Haddadi**, C. Teodosiu, A. Zaoui, *A numerical mesoscope for the investigation of local fields in microheterogeneous rate-dependent elastoplastic materials at finite strain.*

S. Schmauder, U. Weber, E. Soppa, *Computational mechanics of heterogeneous materials - influence of residual stresses.*

Session 9: Finite Deformations of Polymers

M.C. Boyce, *Micromechanics of deformation in thermoplastic elastomers*

S. Govindjee, *Finite deformation fracture and failure of tires.*

W. Ehlers, B. Markert, *Theoretical and computational simulation of viscoelastic polymeric foams at finite strains.*

Session 10: Advanced Computational Methods

C. Carstensen (Keynote lecture), *Nonconvex energy minimization and relaxation in computational material science.*

K. Runesson, P. Hansbo, F. Larsson, *Space-time adaptivity for large strain viscoplasticity based on goal-oriented a posteriori error measures.*

R. Mahnken, **E. Stein**, *Finite deformation plasticity with damage and asymmetric compression-tension behavior including parameter identification.*

Session 11: Texture Development, Modeling of Polycrystals

D. Besdo, *On the influence of texture model types on simulations of sheet metal forming.*

A. Bertram, T. Böhlke, *Micro-macro-simulation and phenomenological modeling of the texture. Induced elastic and plastic anisotropy in metal forming processes.*

F. Auslender, M. Bornert, A. Zaoui, T. Hoc, R. Masson, *An affine micromechanical approach for the prediction of the elastoplastic behavior of polycrystals at finite strain.*

Session 12: Homogenization Methods, Multiscale Problems

H. Moulinec, J.C. Michel, **P.M. Suquet** (Keynote lecture), *Analysis of the local response of nonhomogeneous materials using fast Fourier transforms.*

P. Gilormini, Y. Liu, **P. Ponte-Castañeda**, *Homogenization-based constitutive models for polycrystalline metals undergoing finite strain.*

Y. Tomita, Y. Higa, *Multiscale characterization of deformation behavior of metal-matrix composite under plane strain conditions.*

Session 13: Computational Modeling of Cracking

T. Belytschko (Keynote lecture), *Discontinuous approximations for cracks and shear bands.*

V. Tvergaard, *Cohesive zone modeling of crack growth along different functionally graded joints between two materials.*

A. Delaplace, A. Ibrahimbegovic, *discrete modeling of cracking of brittle materials in large relative motion and localization problem.*

Session 14: Advanced Finite Elements

G.N. Wells, **R. de Borst**, L.J. Sluys, *A large-strain enhanced finite element method for cohesive-zone models.*

D. Reddy, *Affine-approximate finite element methods and stabilization techniques in elasticity.*

Session 15: Anisotropic Finite Inelasticity

P. Haupt, T. Kersten, *On the representation of anisotropic viscoplasticity.*

A. Menzel, **P. Steinmann**, *Formulation and computation of geometrically non-linear anisotropic in-elasticity.*

G.A. Holzapfel, T.C. Gasser, *A structural elastoplastic model for the large-strain behavior of biological soft tissues: continuum formulation and numerical approximation.*

Session 16: Material Growth

G.A. Maugin, S. Imatani (Keynote lecture), *material growth in solid-like materials.*

W. Daves, W. Stadlbauer, E.A. Werner, **F.D. Fischer**, *Modeling and characterization of large shear strains at a rail surface.*

C. Miehe, M. Lambrecht, J. Schotte, *Computational homogenization of materials with microstructures based on incremental variational formulations.*

Report composed by Christian Miehe

**01-7 IUTAM Symposium on Tubes, Sheets and Singularities in Fluid Dynamics
Zakopane, Poland, September 2-7, 2001****a) Scientific Committee**

K. Bajer (Poland, Co-Chair), M. Farge (France), J. Jimenez (Spain), S. Kida (Japan), R. Krasny (USA), H.K. Moffatt (UK, Co-Chair, IUTAM repres.), A. Nordlund (Denmark), A.E. Perry (Australia), D.I. Pullin (USA)

b) Short summary of scientific progress achieved

Some fifty years ago coherent structures in turbulence were discovered by statistical analysis of the velocity measurements, but their geometrical form remained unknown for more than three decades. Direct numerical simulations (DNS) and skilful visualisation show them to be elongated vortices whose cross-sectional structure seems to be controlled by viscosity, but the dynamics of their creation still remains a puzzle.

Filaments can result from instabilities of vortex sheets and various aspects of this process in both steady and unsteady sheets, possibly stretched in either direction, are of great interest. The new evidence (from DNS) inspired much theoretical work, both on the steady state, and on the interaction and stability of vortices. Interaction of vortex filaments results in spirals, which are the structures in physical space that can be associated with the spectral power laws of turbulence. Such interactions also produce extremely strong gradients of either velocity or its derivatives which, in the high Reynolds number limit, control the process of viscous energy dissipation, and which may lead to the formation of singularities. The existence of the finite-time singularities in the solutions of the Navier-Stokes equation is one of the fundamental Millennium Prize Problems listed by Clay Mathematics Institute (www.claymath.org).

Vortex filaments are in many ways analogous to the magnetic flux tubes, which are coherent structures, found in magnetohydrodynamics (MHD), especially prominent in the solar dynamo process. Interacting flux tubes create current sheets and, in the ideal limit, tangential discontinuities - the generic MHD singularities which form in the process of relaxation towards magnetostatic equilibrium. The conditions in the solar photosphere are nearly ideal, so the topological constraints imposed by non-dissipative MHD are important, as are the singularities where these constraints are most easily broken.

Both slender vortices and flux tubes can have topologically complex form (e.g. knotted or linked) and the mathematical apparatus necessary to describe and classify the topology is the same. Their steady states are mathematically equivalent, but there are important differences in their evolution. The influence of the topology on the dynamics provides an important common ground.

All these aspects of coherent structures were covered in four days devoted to 'Vortices', 'MHD', 'Turbulence' and 'Singularities'. The last session, 'Other topics', included

papers on the new perspectives and problems hitherto regarded as separate from the main theme yet either related by the similarity of the methods employed or making an interesting comparison or analogy.

The details of the program can be found on www.igf.fuw.edu.pl/IUTAM

c) Countries represented and number of participants

Australia (2), France (7), Poland (15), Ukraine (2), China (1), Germany (3), Russia (9), UK (7), Denmark (1), Japan (4), Spain (2), USA (9)

d) Publication of Proceedings of the Symposium

A volume containing approximately 40 papers will be published by Kluwer in 2002.

e) Financial support

The following institutions kindly provided the essential financial support

- International Union of Theoretical and Applied Mechanics (USD 5000 = Zl 19 926)
- NATO (BEF 1 000 000 = Zl 88 500)
- US Office of Naval Research, International Field Office (USD 10 000 = Zl 39 500)

We are grateful to Warsaw University, Department of Physics, for the use of their facilities during the preparation of the Symposium.

f) Scientific program (All presentations were oral)

Invited lectures

B.J. Bayly, *Asymptotic structure of fast dynamo eigenfunctions.*

P. Constantin, *Near identity transformations for the Navier-Stokes equations.*

S.C. Cowley, *Singularity formation in MHD.*

S.J. Cowley, *An exponentially small massacre of BLT and DNS.*

M. Farge, K. Schneider, *Wavelet approach to study tubes, sheets and singularities in turbulent flows.*

U. Frisch, *Singularities and the distribution of density in the Burgers/adhesion model.*

Y. Fukumoto, Y. Hattori, *Stability of vortex ring revisited.*

J.D. Gibbon, *A study of singularity formation in a class of solutions of the Euler & ideal MHD equations.*

J. Jimenez, *Coherent dynamics in near-wall turbulence.*

S. Kida, *Life, structure, and dynamical role of vortical motion in turbulence.*

R. Krasny, K. Lindsay and M. Nitsche, *Vortex sheet roll-up: chaos and ring merger.*

A. Leonard, *Interaction of localized packets of vorticity with turbulence.*

H.K. Moffatt, R. Hunt, *A model for magnetic reconnection.*

A. Nordlund, K. Galsgaard, *The structure of dissipating and quiescent magnetic fields.*

- R. Pelz, *Point collapse in octahedral, vortical flows.*
 R.E. Priest, *Current sheets in the Sun's corona.*
 D.I. Pullin, *Vortex tubes, spirals and large-eddy simulation.*
 N. Zabusky, *Vortex layers and 'projectiles' in accelerated inhomogeneous (Richtmyer-Meshkov and Rayleigh-Taylor) flows: Emerging 2D and 3D structures in shocked/interface, curtain-&-bubble interactions.*

Contributed papers

- P.M. Akhmetev, *A high-order analog of the helicity number for a pair of divergent-free vector field.*
K. Bajer, A. P. Bassom and A. D. Gilbert, *Mixing and diffusion in planar vortices.*
C.F. Barenghi, D. C. Samuels and R. L. Ricca, *Complexity measures of tangled vortex filaments.*
A. Bhattacharjee, C. S. Ng, *Sufficient condition for finite-time singularity in a highly symmetric Euler flow.*
A. Bhattacharjee, Z. W. Ma, C. S. Ng and X. Wang, *Current singularities in two and three-dimensional MHD.*
C. Brun, J. Jiménez, *Detection of vortical structures in inertial and dissipation ranges.*
B. Cichocki, P. Szymczak and F. Feuillebois, *Effective boundary condition for creeping flow.*
M. Ekiel-Jezewska, N. Lecoq, R. Anthore, F. Bostel and F. Feuillebois, *Interactions between two close spheres in Stokes flow.*
T. Gomez, M. Larcheveque, H. Politano and A. Pouque, *Spiral small-scale structures in compressible turbulent flows.*
 A.A. Gourji, *Intensive and weak mixing in the chaotic region of velocity field.*
 R. Herczynski, *Historical remarks on fluid mechanics.*
K. Higgins, M. S. Chong and A. Ooi, *Merging of non--symmetric Burgers vortices.*
 G. Hornig, *Reconnection in magnetic and vorticity fields.*
 P.A. Kuibin, *On motion of a double helical vortex in a cylindrical tube.*
 E.A. Kuznetsov, *Collapse of vortex lines in hydrodynamics and its sequences.*
 S. Le Dizès, *Optimal two-dimensional perturbations in a stretched shear layer.*
 T. Lipniacki, *Evolution of the anisotropy of the quantum vortex tangle.*
V.S. Malyuga, A. M. Gomilko, *Steady Stokes flow in a trihedral corner.*
C. Mayer, G. Hornig, *Higher order topological invariants.*
 Muravnik, A.B., *On Cauchy problem for quasi-linear singular parabolic equations with singular potentials.*
 T. Nakaki, *Co-rotating five point vortices in a plane.*
V.L. Okulov, J. N. Sorensen and L. K. Voigt, *L-transition from right- to left-handed helical vortices.*
V. Pankrashkin, S. Yu. Dobrokhotov and E. S. Semenov, *On Maslov conjecture about the structure of weak point vortical singularities of the shallow water equations.*
 Z. Peradzynski, *On helicity conservation laws.*
 R.L. Ricca, *Energy, helicity and crossing number relations for complex flows.*

M. Rossi, I. Delbende and S. Le Dizes, *Effect of stretching on vortices with axial flow: a three-dimensional stability study.*

V.P. Ruban, D. I. Podolsky and J. J. Rasmussen, *Finite time singularities in a class of hydrodynamic models.*

K. Schneider, M. Farge, *Extraction and analysis of coherent vortex tubes in turbulent mixing layers.*

C. Sliwa, *Motion of vortex lines in the hydrodynamic formulation of quantum mechanics.*

A.D. Verga, M. Abid, *Stability of vortex sheet roll-up.*

X. Xie, W. W. Mar and H. L. Zhou, *Helical structure in axisymmetric shear layer flows.*

V. Zheligovsky, O. Podvigina, *An example of development of singularity in a solution to the force-free Euler equation.*

Report composed by Konrad Bajer & Keith Moffatt

Report of the IUTAM Summer School on Hierarchical Structure and Modeling of Turbulence Beijing, China, August 3-9, 2001

a) Organization

The IUTAM summer school on Hierarchical Structure and Modeling of Turbulence was held in the main campus of Peking University in Beijing between August 3 and August 9, 2001. The summer school was hosted by the State Key Laboratory for Studies of Turbulence and Complex Systems (LSTCS), a research unit at the Peking University, which is sponsored by the Minister of Education and the Minister of Science and Technology. Prof. Zhen-Su She, Professor and the Director of LSTCS chaired the organizing committee.

b) Lecturers

The summer school invited the following principal lecturers:

Prof. Shiyi Chen, John Hopkins University, USA and Peking University, China
Prof. Emily Ching, The Chinese University of Hong Kong, Hong Kong
Prof. Charles Meneveau, John Hopkins University, USA
Prof. Hiroshi Sato, Institute for Fluid Mechanics, Tokyo University
Prof. Zhen-Su She, Peking University, China and UCLA, USA
Prof. Tomomasa Tatsumi, Kyoto University, Japan
Prof. Jian-Jun Xu, McGill University, Canada

c) Summer School topics

The topics covered by the lecturers include:

- Statistical and Hierarchical Structures in Turbulence and Complex Systems (Z.S. She)
- Large eddy simulations and sub grid scale physics (C. Meneveau)
- Direct numerical simulation study of turbulence (S.Y. Chen)
- Statistics and Intermittency in Turbulent Convection (E. Ching)
- Velocity distributions in homogeneous turbulence (T. Tatsumi)
- Complex system perspective of turbulence (H. Sato)
- Interfacial wave theory of pattern formation dynamics in complex systems (J.J. Xu)

Discussions among the participants were organized outside the scheduled main lectures.

In addition, a satellite workshop entitled Turbulence and Complex Systems was organized on August 4 by LSTCS, in which the young scholars at LSTCS delivered 11 talks.

d) Participants

There were 100 participants from 15 Chinese research institutes and universities; eighty percent of them are young scholars and students under the age of 35.

e) Scientific output

The summer school greatly increased the interest of young students in the study of fluid mechanics and turbulence, and also provided a good opportunity for young scholars (including the speakers) to exchange research ideas and to foster collaborations.

f) Financial support

The summer school was co-sponsored by:

- IUTAM/ICSU
- National Natural Science Foundation
- Minister of Education of China
- Peking University

Report composed by Fang Jing, Beijing, China

2001 Treasurer's Report

	USD
Balance, 31 December 2000	275,294.08
Net revenues minus expenses for 2001	76,177.54
Balance, 31 December 2001	351,471.62
Revenues collected during 2001:	
Subscription dues	93,259.50
Interest income	7,524.40
ICSU allocations	4,000.00
Repayment Symposia	897.00
ICTAM2000 Payment	30,000.00
Total	135,680.90
Expenses paid during 2001:	
Symposia	35,000.00
IUTAM summer course	0.00
Other meetings	0.00
Travel, Bureau	8,600.75
Travel, Congress Committee Executive Committee	7,007.96
Travel, Other	0.00
Contribution to ICSU	2,677.00
Administration	5,472.53
Auditor's fee	1,867.92
Printing costs	0.00
Bank fees	932.63
Total	61,558.79
Revenues minus expenses for 2001	74,122.11
Gain (loss) from exchange of currency	2,055.43
Net revenues minus expenses for 2001	76,177.54

Statement of IUTAM Bank Accounts
(1 January 2001 through 31 December 2001)

Bank	Balance 31-Dec-00	Withdrawals 2001	Deposits 2001	Balance 31-Dec-01	Currency
Checking Accounts					
Citizens Bank Providence 1009-367-2	73,365.00	(63,709.80)	133,352.91	143,008.11	US\$
ABN-AMRO Bank Eindhoven 41.41.42.551	21,952.56	(11,867.92)	14,058.76	24,143.40	US\$
ABN-AMRO Bank Eindhoven 41.41.28.311	1,979.13	(89.99)	12.18	1,901.32	NLG
Bank of Ireland Belfield UCD Dublin 12526624	3,490.58	(3,490.58)	0.00	0.00	IRL
Savings Accounts					
Busey Bank Urbana	21,417.24	0.00	1,061.49	22,478.73	US\$
Citizens Bank Providence	96,454.39	(247.76)	3,334.77	99,541.40	US\$
ABN-AMRO Bank Eindhoven	146,617.79	0.00	5,361.82	151,979.61	NLG

IUTAM Bank Account Information

Treasurer:

Professor L. B. Freund, Division of Engineering, Brown University, Providence,
RI 02912-9104, USA

Assistant Treasurers:

Professor D. H. van Campen, Faculty of Mechanical Engineering, Eindhoven University
of Technology, Postbus 315, NL-5600 MB Eindhoven, The Netherlands
Professor Bruno A. Boley, Department of Civil Engineering & Engineering Mechanics,
Columbia University, New York, NY 10027

Bank Accounts:

ABN-AMRO Bank, Postbus 515, 5600 AM Eindhoven, The Netherlands, Account
41.41.28.311 (NLG), 41.41.42.551 (USD)

Citizens Bank, One Citizens Drive, Riverside, RI 02915-3000, Account 1009-367-2
(USD)

Bank of Ireland, University Branch Montrose, Dublin, Ireland, Account 12526624 (IRL)

Subscription Due Paid in Membership Units (1 January 2001 through 31 December 2001)

Adhering Organization	1995	1996	1997	1998	1999	2000	2001
Argentina	1	1	1	1	1	1	--
Australia	1	1	3	3	3	3	3
Austria	1	1	1	1	1	1	1
Belgium	5	5	5	5	5	5	5
Brazil	1	1	1	1	1	1	1
Bulgaria	1	1	1	1	1	1	--
Canada	8	8	8	8	8	8	8
Chile			--	--	--	--	1
China/Beijing	8	8	8	8	8	8	8
China/ Hong Kong			1	1	1	1	1

Adhering Organization	1995	1996	1997	1998	1999	2000	2001
China/Taipei	3	3	3	3	3	3	3
Croatia	1	1	1	1	1	--	--
Czech Republic	1	1	1	1	1	1	1
Denmark	3	3	3	3	3	3	3
Egypt	1	1	1	1	1	1	1
Estonia	1	1	1	1	1	1	1
Finland	3	3	3	3	3	3	3
France	8	8	8	8	8	8	8
Georgia							1
Germany	8	8	8	8	8	8	8
Greece	1	1	1	1	--	--	1
Hungary	1	1	1	1	1	--	1
India	5	5	5	5	5	5	5
Ireland	1	1	1	1	1	1	1
Israel	3	3	3	3	3	3	3
Italy	8	8	8	8	8	8	8
Japan	8	8	8	8	8	8	8
Kazakhstan			--	--	--	--	--
Korea	3	3	3	1	1	1	1
Latvia	1	1	1	1	1	1	1
Morocco					--	--	--
Netherlands	5	5	5	5	5	5	5

Adhering Organization	1995	1996	1997	1998	1999	2000	2001
New Zealand	1	1	1	1	1	1	1
Norway	1	1	1	1	1	1	1
Poland	3	3	3	3	3	3	3
Portugal	1	1	1	1	1	1	1
Romania	1	1	1	1	1	1	1
Russia	8	8	8	8	8	8	--
Saudi Arabia	1	1	1	1	1	1	1
Slovakia	1	1	1	1	1	1	1
Slovenia	1	1	1	1	1	1	1
South Africa	1	1	1	1	1	1	1
Spain	1	1	1	1	--	1	1
Sweden	5	5	5	5	5	5	5
Switzerland	3	3	3	3	3	3	3
Turkey	1	1	1	--	--	--	--
Ukraine							1
United Kingdom	8	8	8	8	8	8	8
United States	12	12	12	12	12	12	12
Vietnam	1	1	1	1	--	1	--
Yugoslavia	1	1	1	1	--	--	--

Note: For any particular year, a dash (--) indicates that dues had not been paid as of 31 December 2001 and a blank space indicates no adhering organization. Dues are expressed in membership units of 1, 3, 5, 8 or 12, corresponding to category of membership from I through V, respectively.

Reports on Affiliated Organizations

AFMC (Asian Fluid Mechanics Committee)

Preparations for the Ninth Asian Congress of Fluid Mechanics are in progress. The Congress will be held from May 27-31, 2002 in Isfahan, Iran.

Chairman of the Organizing Committee: Professor E. Shirani, Department of Mechanical Engineering, Isfahan University of Technology, Isfahan 84154, Iran.

Deadlines:

Pre-registration form: May 1, 2001. Submission of papers: September 1, 2001. Notice of Acceptance: December 1, 2001. Advance registration and accommodation reservation: March 1, 2002.

More information is available at <http://conferences.iut.ac.ir/acfm9>.

Report composed by Masaru Kiya

CACOFD (Caribbean Congress of Fluid Dynamics)

The Caribbean Congress of Fluid Dynamics held its Fifth Latin – American and Caribbean Congress on Fluid Mechanics at Universidad Simon Bolivar, Caracas, Venezuela from May 14 – 17, 2001. The Organizing Committee for this Congress was headed by the President of CACOFD, Prof. Freddy Malpica, and attracted over 100 participants. Two special features of this Conference were a Session on “River Integrated Navigation” and a course on “Porous Media”.

At the Business Meeting of the Congress, it was decided that Trinidad and Tobago will host the Sixth Congress in 2004 and that an Executive Meeting will be held in Tobago in early 2002.

Report composed by Harold Ramkissoon

CISM (International Centre for Mechanical Sciences)

1. Courses and Seminars

The regular program of courses and seminars, planned for the Centre for the year 2001 by the Scientific Council, took place in two Scientific Sessions, the Kroener Session (June-July 2001) and the Crighton Session (September-October 2001). The topics, always at an advanced level, included different fields of mechanics and related computer

sciences, both at a basic and applied level. One course was sponsored by the EC, three by UNESCO and others by CNR (National Research Council of Italy).

The Kroener Session

- Modeling, Manipulation and Control of Transverse Jets
- Recent Advances in Boundary Element Methods and their Solid Mechanics Applications
- Principles of Nonparametric Learning
- Selected Topics in Boundary Integral Formulations for Solids and Fluids
- Stability of Structures: Modern Problems and Unconventional Solutions

The Crighton Session

- Biomechanics of Soft Tissue
- Theories of Turbulence
- Formalware Engineering
- Aluminium Structural Design (Advanced Professional Training)

2. Other Events

Besides the above courses, the following meetings were organized or hosted by CISM in 2001:

- Meccanica delle Murature, March 9-10, 2001
- CEPET 2nd Workshop (Central European Program in Economic Theory), June 6-8, 2001
- INFOS 12th Biannual Conference (Insulating Films on Semiconductors), June 20-23, 2001

European Commission Project for Europe-India Cooperation:

- New Trends in Human-Computer Interaction, June 25-29, 2001
- Probabilistic Models in Combinatorial Optimization, October 1-5, 2001

3. Editorial Activities

The lectures of several courses held at CISM are published in book form and distributed by Springer Verlag Vienna-New York.

The following books were published in 2001

S. Pellegrino *"Deployable Structures"*

A. Soldati-R. Monti *"Turbulence Structure and Modulation"*

B.A. Schrefler *"Environmental Geomechanics"*

J.A.C. Ambrosio *"Crashworthiness: Energy Management & Occupant Protection"*

M. Hayes-G. Saccomandi *"Topics in Finite Elasticity"*

J. Blachut-H.A. Eschenauer *"Emerging Methods for Multidisciplinary Optimization"*

D.V.Griffiths-G. Gioda *"Advanced Numerical Applications and Plasticity in Geomechanics"*

R. Kienzler-A. Maugin *"Configurational Mechanics of Materials"*

A. Suleman *"Smart Structures: Applications & Related Technologies"*

D. Jeulin-M. Ostoja Starzewski *"Mechanics of Random & Multiscale Microstructures"*

G. Della Riccia-H.J. Lenz-R. Kruse *"Data Fusion and Perception"*

The international Journal for rapid communication "Mechanics Research Communications" (bimonthly) created by CISM and Pergamon Press, Oxford-New York in 1973 published in 2001 its twenty-eighth volume. It contains short communications on research related to a wide domain of both theoretical and applied mechanics.

4. Scholarships

A number of scholarships, including free lodging and board or exemption from registration fee, was offered during the courses to participants who were not supported by their home institutions, priority being given to young researchers coming from countries that contribute to CISM's operating resources.

Partial travel reimbursements as well as free board and lodging in Udine were granted to some participants from Mediterranean and Central-European countries thanks to a UNESCO contribution.

5. International Participation

57 lecturers from 20 countries delivered lectures in the Kroener and Crighton Sessions. The courses were attended by 369 participants coming from 32 countries.

Report composed by Giovanni Bianchi

EUROMECH (European Mechanics Society)

EUROMECH is an international non-governmental non-profit scientific organization. The objective of the Society is to engage in all activities intended to promote in Europe the development of mechanics as a branch of science and engineering. The society is governed by the Council whose members are being elected according to rules set in Statutes.

EUROMECH meetings

The EUROMECH Council has overall responsibility for EUROMECH Colloquia and EUROMECH Conferences.

EUROMECH Colloquia are informal meetings on specialized research topics. Participation is restricted to a small number of research workers actively engaged in the field of each Colloquium. The organization of each Colloquium, including the selection of participants for invitation, is entrusted to a Chairman. Proceedings are not normally published. Those who are interested in taking part in a Colloquium should write to the appropriate Chairman. Number, Title, Chairperson or Co-chairperson.

EUROMECH Conferences are broad in scientific scope. They comprise the EUROMECH Solid Mechanics Conference, the EUROMECH Fluid Mechanics Conference, the EUROMECH Turbulence Conference, the EUROMECH Nonlinear Dynamics Conference and the EUROMECH Mechanics of Materials Conference. They are open to all those interested and are expected to have a number of participants between 150 and 600. The general purpose is to provide opportunities for scientists and engineers to meet and discuss current research. The responsibility for each series of Conferences is delegated to a Standing Conference Committee. The organizational work is carried out by Local Organizing Committees (LOC). Those who are interested in taking part in one of the Conference should write to the Chairman or Secretary of the appropriate LOC.

In 2001 no EUROMECH Conference took place, three big EUROMECH Conference. EUROMECH Society initiated and organized 12 Colloquia during 2001.

For more details see www.euomech.cz where the list of Colloquia and Conferences in the past, as well as in the future, is presented.

Report composed by Miloslav Okrouhlik

HYDROMAG (International Association for Hydromagnetic Phenomena and Applications)

HYDROMAG is an international association of scientists and engineers active in those fields of research which involve the flow of fluids in the presence of a magnetic fields, namely magnetohydrodynamics (MHD), electromagnetic processing of materials (EPM) and dynamics of magnetic fluids (MF). HYDROMAG promotes growth and visibility of the field of hydromagnetics and stimulates exchanges between its members throughout the world via conferences, workshops, summer schools and publications. Detailed information on HYDROMAG can be accessed under

<http://www.maschinenbau.tu-ilmeneau.de/mb/wwwtd/hydromag/home.html>

This WWW-site contains information on membership, forthcoming conferences, the electronic HYDROMAG newsletter and a link to the German Ferrofluid Information Server, maintained by Dr. S. Odenbach (University of Bremen).

During the year 2001 several workshops and scientific meetings have been conducted involving the active participation of HYDROMAG and its members including the International Conference on Magnetic Fluids held at Bremen University.

A group of European Scientists successfully established a network on MHD in frame of the COST-program of the European Commission called "COST action P6

Magnetofluidynamics". The program supports mutual visits of scientists. Detailed information can be obtained from

http://www.maschinenbau.tu-ilmenau.de/mb/wwwtd/COST/COST_Page01.html

Report composed by André Thess

IABEM (International Association for Boundary Element Methods)

The BETEQ 2001 symposium, jointly organized by the Queen Mary College (London, UK) as part of their BETEQ conference series and IABEM, was held at Rutgers University, USA, on July 16-18, 2001 (<http://www.srac.rutgers.edu/~mechaero/Beteq/>).

The main organizers were Profs. M. H. Aliabadi (Queen Mary College) and M. Denda (Rutgers University). The symposium was attended by 78 participants from 18 countries (including host country) and 66 papers were presented. The proceedings have been published in book form (Hoggar press, Geneva, Switzerland) and a selection of papers appeared in the Electronic Journal of Boundary Elements (<http://www.epm.ornl.gov/EJBE/>).

The next IABEM symposium is going to be held on May 28-30, 2002 at the University of Texas at Austin (see <http://cavity.ce.utexas.edu/iabem2002/>), under the supervision of Prof. S. Kinnas. A special issue of Computational Mechanics is planned in connection with this symposium.

Report composed by Marc Bonnet

IACM (International Association for Computational Mechanics)

The following IACM supported events took place in 2001:

ECCM'2001 – European Conference on Computational Mechanics, Cracow, 26 - 29 June 2001. Organized by Department of Technical Sciences of the Polish Academy of Sciences. Polish Association for Computational Mechanics

CFD'2001 - ECCOMAS Computational Fluid Dynamics 2001 Conference, Swansea/Wales, UK, September 4 - 7, 2001. Organized by Dr. Adrian Lepper.

APCOM'01 - First Asian-Pacific Congress on Computational Mechanics, Sidney, November 20-23, 2001. Organized by Prof. S. Valliapan

IACM activities 2002:

V IACM World Congress on Computational Mechanics (WCCM). The V WCCM will take place on 7-12 July 2002 in Vienna. The congress chairmen will be Profs. H. Mang and F.G. Rammerstorfer from Technical University of Vienna.

Details on above events can be obtained from the IACM Secretariat at iacm@cimne.upc.es. Further information on IACM activities can be found in the web page www.cimne.upc.es/iacm

Report composed by Eugenio Oñate

IAVSD (International Association for Vehicle System Dynamics)

The biannual symposium of the IAVSD took place at the University Lyngby in Copenhagen in the time August 20th –24th, 2001. It was attended by 152 scientists from 22 countries and about 20 accompanying persons. With four state of the art special lectures and about 65 oral presentations in 3 parallel sections the topics of road and rail vehicle dynamics but also control developments for improving vehicle behaviour were presented. 15 posters supplemented the scientific event. Since there existed and exists a close connection with Sweden, one day of the symposium took place at the University of Lund. A well-planned social program allowed for personal discussions, information about the country and cities and regeneration after the tense scientific program. But the symposium was also overshadowed by the death of one of our most distinguished Honorary Members, Prof. Dr. Anton de Pater, retired member of the Delft University of Technology, by a heart attack. He will always be an ideal of a dedicated scientist to us.

At this event there were also the meetings of the board of IAVSD to cope with actual and forthcoming problems. Two members resigned and were replaced by younger scientist from the Czech Republic and Hungary. In the future Prof. Dr. Valasek, Technical University Prague will take over the position of Secretary General from Prof. R. S. Sharp, whom we want to thank very much for his excellent work. Prof. Dr. Wickens was awarded with the Honorary Membership of the Association for his merits as former president, member of the board and his general effort for the IAVSD.

The report on the International Journal of Vehicle System Dynamics (VSD), the official organ of the IAVSD, showed a constant, relatively high number of subscriptions and a good rate of submissions. The special supplement on the Mini-Symposium on Vehicle System Dynamics of the ICTAM 2000 Congress was published in autumn 2001.

The next event will be a co-operation with respect to the International AVEC'02 Symposium on Advanced Vehicle Control in September 2002 in Hiroshima, Japan (<http://avec02.mech.cst.nihon-u.ac.jp>), sponsored by the society of Automotive Engineers of Japan (JSAE).

The next, the International 18th IAVSD Symposium will also take place in Japan, August 25th –29th, 2003, Kanagawa Institute of Technology (<http://iavsd.sd.kanagawa-it.ac.jp>).

For 2004 a colloquium on “Tyre Models for Vehicle Dynamic Analysis” is planned to take place in Vienna, about end of August, beginning of September. A special tyre benchmark, concerning the integration of the components: measurement - approximation – implementation in MKS-systems for simulation will be included.

Furthermore again a co-operation will be established for the next AVEC’04 Symposium to be held in Delft.

Report composed by Peter Lugner

ICA (International Commission for Acoustics)

The 17th International Congress on Acoustics was held in Rome from September 2-7, 2001. The Congress was attended by nearly 1300 participants from 55 countries (more complete statistics have been published in the J. Acoust. Soc. Am. Vol. 111, pages 647-648, 2002). Papers presented at the Congress covered all major topics in acoustics. The scientific program highlighted 4 Plenary Lectures, 27 Keynote Lectures and included 70 exhibitors. There is no doubt that the Congress was the major international event that was expected.

The 2nd General Assembly of Member Societies of the Commission was also held during the Congress. Over 50 Delegates registered to attend the General Assembly. In addition, a number of guests were also present, notably from Argentina and Chile. Larry Crum chaired the meeting.

He reported that a total of 30 early-career scientists received a Travel Support Grant to attend the 17th Congress. We have now awarded several Conference Grants to support small, specialized symposia in acoustics. The Delegates were asked to make the ICA Conference Grants better known to their Member Societies and to encourage applications.

We are currently working on an ICA Awards program.

The Treasurer gave a financial report showing that the ICA was in a good position to carry on with its on-going programs and new initiatives. In particular he presented the status of membership dues showing a near complete payment history.

The ICA is growing. Three new Member Societies were approved for membership in Rome (Slovenia, Argentina and Chile) while three additional new members were approved last year in Nice (Hong Kong, Portugal and Turkey). We are encouraging Societies not yet members to apply for membership on an on-going basis.

The ICA continues to maintain an International Calendar of Meetings and Congresses. The Calendar, as well as other information regarding the ICA can be found on the web site [<http://www.icacommission.org>].

Report composed by Gilles Daigle and Suk Wang Yoon

ICF (International Congress on Fracture)

The International Congress on Fracture (ICF) is the premier body for the promotion of worldwide cooperation among engineers and scientists concerned with the mechanics and mechanisms of fracture, fatigue and strength of solids. The Congress was founded by Professor Takeo Yokobori in 1965 and formally started in April 1978 with a registered office in Japan. Among the aims and objectives of the Congress are to promote the integration of multi-disciplinary studies on fracture and to provide the means whereby the results of such efforts may be publicly communicated. To this end, the Congress, both solely and in cooperation with other bodies, hosts the International Conference on Fracture (ICF) every four years, and additionally sanctions smaller international meetings on fracture in the interim years.

ICF10 was organized jointly by the United States and Japan and held on December 2-6, 2001 in the Hilton Hawaiian Village, Waikiki Beach, Honolulu, Hawaii, USA. There were about 635 delegates from 44 countries. ICF 10 was chaired by Professor Teruo Kishi of the National Institute of Materials Science (e-mail: kishi.teruo@nims.go.jp) and with Professor K. Ravi-Chandar (University of Texas, Austin), R.O. Ritchie (University of California, Berkeley) and A.T. Yokobori, Jr (Tohoku University) as vice-chairs.

The next major ICF conference, the 11th International Conference on Fracture (ICF-11), will be held in Torino, Italy on March 2-25, 2005 under the chairmanship of Professor Alberto Carpinteri of the Politecnico di Torino (e-mail: carpinteri@polito.it). The conference organizer will be "Centro Congressi Internazionale Torino". Discussions will commence with a number of publishers during 2002 regarding publication of the ICF-11 Proceedings. An ICF Inter-quadrennial Seminar on "Scale Interaction at Fracture" will be organized by Professor RV Goldstein (e-mail: goldst@ipmnet.ru) on either June 23-26 or August 25-28, 2003 in Moscow, Russia, under the auspices of the Institute for Problems in Mechanics, Russian Academy of Sciences.

Report composed by Yiu-Wing Mai

ICHMT (International Centre for Heat and Mass Transfer)

The International Centre for Heat and Mass Transfer (ICHMT) is an international, professional, non-governmental, non-profit organization. The general objective of the Centre is to promote and to foster international cooperation in the science of heat and

mass transfer and its applications. Its secretariat is located at the Mechanical Engineering Department of Middle East Technical University (METU), and is supported by both METU and Scientific and Technical Research Council of Turkey (TÜBİTAK).

There were 3 Symposia organized by ICHMT in 2001:

- 5th World Conference on Experimental Heat Transfer, Fluid Mechanics and Thermodynamics, 24 - 28.9.2001, Thessaloniki, Greece,
- 3rd International Symposium on Radiative Transfer, 17 - 22.6.2001, Antalya, Turkey,
- 2nd International Symposium on Advances in Computational Heat Transfer, 20 - 25.5.2001, Palm Cove, Queensland, Australia.

There was one ICHMT Executive Committee Meeting on November 10, 2001, in New York, USA.

One symposium will be organized during 2002 by ICHMT

- International Symposium on Visualization and Imaging in Transport Phenomena, 5 - 10. May, 2002, Antalya, Turkey,

and one summer school will be co-sponsored by ICHMT

- Low temperature and Cryogenic Refrigeration - Fundamentals and Applications, 23.6. - 5.7.2002, Cesme, Turkey.

Report composed by Rudolf Dvorák

ICM (International Congress on the Mechanical Behaviour of Materials)

Preparations are in progress to organize the next International Congress on the Mechanical Behavior of Materials (ICM9) which will be held in Geneva, Switzerland, from 25 to 29 May 2003. The conference will include plenary and sectional lectures and contributed lectures and posters. In addition to topics of practical importance, ICM9 will include sessions on new research directions and developments.

Information on the conference can be obtained at: <http://www.kenes.com/icm9>

Report composed by Sol Bodner

ICR (International Committee on Rheology)

The XIIIth International Congress on Rheology was held at Cambridge in the UK from August 20 to 25, 2000. The meeting was organized by the British Society of Rheology on behalf of the European Society of Rheology, and Professors Ken Walters of Aberystwyth and Peter Townsend of Swansea chaired the organizing committee. The

others on the committee were Professor M. H. Manfred of Berlin, Professor C. J. S. Petrie of Newcastle, and Dr. D. M. Binding, also of Aberystwyth, who was the Congress Administrator. The technical sessions comprised talks and posters on almost all aspects of rheology, and 817 persons from 42 countries were registered at the Congress.

Because of the large number of attendees and because of limited dining facilities in Cambridge, there were two separate, simultaneous Congress Banquets.

During the Congress, the International Committee on Rheology, comprising Delegates from 24 national societies of rheology, met and dealt with the selection of the site of the 2004 Congress. The site now rotates among three regions in the world – Europe, the Americas and Asia/Australia. After Congresses in Quebec City in 1996 and the Cambridge in 2000, a site in Asia/Australia was favored for 2004 and the national societies in that region proposed that the site be in Korea. The proposal was approved by votes from three Delegates representing the three regions. The Korean Society plans to hold the Congress in Seoul toward the end of August 2004. At the end of the meeting and following past practice, Professor Walters, co-chairman of the 2000 Congress, became the Chairman of the International Committee, succeeding Professor D. DeKee who organized the 1996 Congress.

Report composed by David F. James

IIAV (The International Institute of Acoustics and Vibration)

The International Institute of Acoustics and Vibration IIAV continues to flourish. At present it has 500 individual members in 54 countries and in addition 30 scientific societies or similar organizations are affiliated to IIAV as cooperating societies. During the year 2001 two additional scientific societies, the Acoustical Society of the Netherlands and the Russian Acoustical Society, became affiliated to IIAV. Professor Colin Hansen of the University of Adelaide in Australia, who was elected as President of IIAV in 2000 continues to serve his two-year term. The annual IIAV ballot was held in 2001 in which all members voted on candidates for five new directors to replace the five directors whose four-year terms had expired. The five directors elected were: *Antonio P. O. Carvalho, Portugal; Victor T. Grinchenko, Ukraine; Jean Luis Guyader, France; Anders Nilsson, Sweden and Hiroshi Wada, Japan.* In this year of 2002, the fifth annual IIAV election will be held. The 2002 ballot, in which all IIAV members will take part, is for IIAV President, the two vice-presidents and five new directors. The IIAV vice-presidents and directors serve four-year terms.

About 410 delegates from 37 countries attended this, the Eighth International Congress on Sound and Vibration, ICSV8. The technical programme included over 400 lectures arranged in about 100 sessions, many of which had been organized by members of the ICSV8 Scientific Committee. The ICSV8 technical proceedings were available to delegates at the Congress itself both in CD-ROM and in hard copy format as a set of five volumes totalling 3600 pages in length. There were altogether six plenary keynote lectures: "*A systems approach to the acoustical design, construction and maintenance of*

railways in Hong Kong" by Glenn Frommer (Hong Kong); *"The challenge to break the ultimate noise barrier: sources and control of airframe noise"* by Hanno Heller (Germany); *"Wave propagation and sound transmission in sandwich composite plates"* by Anders Nilsson (Sweden); *"The physics of reverberation"* by Jie Pan (Australia); *"Feedback in active noise control"* by Jing Tian (China) and *"Auditory Mechanics"* by Hiroshi Wada (Japan). In addition, three tutorial sessions were given on the first day on specialized topics. During the Opening Ceremony Professor Mah Dah You was awarded the fourth Honorary Fellow membership of the IIAV. Professor Mah is currently Research Professor of the Institute of Acoustics of the Chinese Academy of Sciences in Beijing and Editor-in-chief of *Acta Acustica* and the English version of the Chinese Journal of Acoustics. In addition, five IIAV members were elevated to fellow grade in IIAV: *Glenn Frommer (Hong Kong), Bernard Ginn (Denmark), Jean Loius Guyader (France), Antonio M. Mendez (Argentina), and Maurice Petyt (UK)*

The Ninth International Congress on Sound and Vibration ICSV9 will be held July 8-11, 2002 in Orlando, Florida, USA at the University of Central Florida. NASA/Kennedy, IIAV and UCF are co-sponsoring ICSV9. Several other societies and organizations are cooperating with its hosting including the American Society of Mechanical Engineering, the Society for Experimental Stress Analysis (SEM) and the American Society of Civil Engineers (ASCE-Aerospace Division.) Roy Bridges, the Director of NASA-Kennedy and himself a former astronaut will open the Ninth Congress with a welcoming address. A total of 600 abstracts submitted by authors from over 50 countries have been received for the Ninth Congress. All of the technical papers presented will be published and available on CD-ROM and hard paper format for participants at the Congress. In addition the technical programme including abstracts of all of the papers in hard copy form will be available at the Congress, and given to all ICSV9 participants. An Exhibition will also be held at the Ninth Congress. Professor Richard H. Lyon, Professor Emeritus of MIT, Cambridge, Massachusetts, USA will be awarded the fifth Honorary Fellowship of IIAV at ICSV9 and will deliver a special keynote lecture just after the Opening Ceremony. The lecture is titled "Early Days for SEA - and now - SPA (Statistical Phase Analysis.)" The date and venue of the Tenth International Congress on Sound and Vibration ICSV10 have already been decided. ICSV10 will be held in Stockholm, Sweden, July 7-10, 2003 and will be hosted by the Royal Institute of Technology in Stockholm. Publication of the International Journal of Acoustics and Vibration IJAV, the refereed quarterly journal of IIAV, continues well on schedule. IJAV is receiving a steadily increasing flow of good papers. Currently each issue of IJAV contains seven or eight papers. Professor Malcolm J. Crocker serves as the Editor-in-chief and maintains the IJAV Editorial Office at Auburn University in the USA, where the refereeing of articles is arranged. Professor Nickolay I. Ivanov serves as the IJAV Managing Editor and arranges for the journal to be typeset and printed in St. Petersburg, Russia. IJAV is sent to all IIAV members and to a number of libraries all over the world.

Report composed by Malcolm J. Crocker

ISIMM (International Society for the Interaction of Mechanics and Mathematics)

As result of the by-elections, which have taken place in 2000 the Executive Committee of the Society, has the following officers since the beginning of the year 2001:

President: Prof. I. Müller, Germany, im@thermo08.pi.tu-berlin.de (until 2003)

Vice President: Prof. G. Capriz, Italy, capriz@dm.unipi.it (until 2003)

Secretary/Treasurer: Prof. K. Wilmanski, Germany, wilmansk@wias-berlin.de (until 2003)

Executive Committee:

N. Bellomo, Italy, bellomo@polito.it (until 2003)

S. Cowin, USA, cowin@banet.net (until 2003)

Y. Engelbrecht, Estonia, je@ioc.ee (until 2003)

C.O. Horgan, USA, ecoh8p@virginia.edu (until 2005)

K. Hutter, Germany, hutter@mechanik.th-darmstadt.de (until 2003)

R.J. Knops, UK, R.J.Knops@hw.ac.uk (until 2003)

M. Renardy, USA, renardym@math.vt.edu (until 2003)

M. Silhavy, Czech Republic silhavy@mbox.cesnet.cz (until 2005)

L. Truskinovsky, USA trusk@aem.umn.edu (until 2005)

E. Virga, Italy virga@dragon.ian.pv.cnr.it (until 2005)

Temporary members:

S. Rionero, Italy rionero@matna2.dma.unina.it (until 2002)

G. Romano, Italy romano@unina.it (until 2002)

Due to these changes the webpage of the Society in the Internet has been renewed, and it can be found under the following address:

<http://www.thermodynamik.tu-berlin.de/isimm/index.html>

STAMM 2002. The biannual meeting of the Society, the Symposium on Trends in Applications of Mathematics to Mechanics (STAMM XIII) will be held in Maiori (near Naples), Italy on September 29th -- October 4th, 2002, organized by prof. S. Rionero and prof. G. Romano (Università degli Studi di Napoli Federico II, Naples, Italy). Scientific Committee: C. Dafermos (U.S.A.), J. N. Flavin (Ireland), G. Iooss (France), I. Müller (Germany), P. E. O'Donoghue (Ireland), P. Podio-Guidugli (Italy), T. Ruggeri (Italy), B. Straughan (U.K.), L. Tartar (U.S.A.), L. Truskinovsky (U.S.A.), P. Villaggio (Italy), A. Visintin (Italy), K. Wilmanski (Germany).

The Conference of Continuum Mechanics and Thermodynamics, affiliated to ISIMM, was held in Potsdam (Germany), on July 30th - August 3rd, 2001, organized by prof. I. Müller, and prof. K. Wilmanski (Germany). Scientific Committee: G. Capriz (Pisa),

C. Cercignani (Milano), K. Hutter (Darmstadt), K. Kirchgässner (Stuttgart), R. Knops (Edinburgh), J. Rodrigues (Lisboa), T. Ruggeri (Bologna), W. Schneider (Wien), J. Sprekels (Berlin), W. Wendland (Stuttgart), H. Zorski (Warszawa).

During the last two years the members of the Society:

Prof. O. Brulin (Stockholm), Prof. D. C. Drucker (Gainesville, Fl.), Prof. E. Kröner (Stuttgart), Prof. J. L. Lions (Paris), Prof. O. Oleynik (Moscow) have passed away.

Current activities of the Society are reported in Newsletters which appear on the webpage of the Society.

Report composed by Krzysztof Wilmanski

ISSMO (International Society for Structural and Multidisciplinary Optimization)

ISSMO held the Fourth World Congress of Structural and Multidisciplinary Optimization on June 4-8, 2001 in Dalian, China. The Congress was attended by 222 participants including 174 overseas delegates, and 31 countries were represented. The International Papers Committee for the Congress had accepted 212 papers (160 for lecture and 52 for poster presentation), and they were presented in four parallel lecture sessions and one poster session. The proceedings of the Congress were published on CD-ROM in September 2001 by Liaoning Electronic Press, Dalian, China.

ISSMO held two Executive Committee meetings and a General Assembly meeting in conjunction with the Congress.

The next World Congress will be held in Lido di Jesolo, Italy on May 19-23, 2003.

ISSMO co-sponsored a number of scientific meetings on optimization in 2001, including the Third ASMO UK/ISSMO Conference on Engineering Design Optimization held in Harrogate, UK on July 9-10, 2001. Please see the new website <http://www.issmo.org> for more details on ISSMO.

Report composed by Niels Olhoff

Reports on ICSU and its Scientific Committees

Relations with ICSU (International Council for Science)

In February 2001 an ICSU Inter-Union meeting was organized in Paris, France. Representatives from ICSU's Scientific Unions and the Committee on Capacity Building met to discuss strategies, to improve communications and to foster inter-union cooperation. The ICSU Grants Programme was subject to critical remarks.

To improve communication a new ICSU website has been developed.

The ICSU Executive Board wishes position statements to be formulated on issues considered to be significant from a scientific point of view. The IUTAM Bureau has decided to respond to ICSU that IUTAM does not have a mechanism to produce state-of-the-art papers on significant scientific issues. IUTAM pursues its interest to participate in the discussion on a number of significant scientific issues by having Symposia and Congresses where the results are published in their Proceedings, archived in the IUTAM Annual Reports.

In 2001 a new Executive Director of ICSU, Thomas Roswell, took office.

The next ICSU General Assembly will be held in Rio de Janeiro, Brazil, from 23-28 September 2002.

Report composed by Dick van Campen and Keith Moffatt

COSPAR (Committee on Space Research)

COSPAR – today the leading international organization for promotion of worldwide cooperation among the scientists concerned with space research and exploration – continues to work very successfully.

On January 23, 2001, an international one-day COSPAR Colloquium “The Interstellar Environment of the Heliosphere” was held in Paris in honor of COSPAR’s leading Executive Director Professor Stanislaw Grzedzielski, an outstanding Polish astronomer, who served in this position since July 1993. The new Executive Director is Dr. Isaac Revah (France).

COSPAR co-sponsored the URSI/COSPAR Workshop on “Modeling the Low Latitude Ionosphere” which was held on June 25-29, 2001 in Sao Jose dos Campos, Brazil. About 60 scientists from all continents attended the workshop and 75 papers were presented in eight oral sessions and one poster session.

COSPAR Colloquium “Solar Terrestrial Magnetic Activity and Space Environment” co-sponsored by COSPAR, IAU and the Chinese National Committee for COSPAR was held in Beijing, China on September 10-12, 2001.

One other COSPAR Colloquium “Multi-wavelength Observations of Coronal Structure and Dynamics” – Yohroh 10th Anniversary Meeting - was held in Hilo, Hawaii on September 17-20, 2001.

VI Conference of the Latin American Association of Space Geophysics, sponsored by COSPAR, was held in Concepcion, Chile on October 1-6, 2001.

The most important event for COSPAR will be the forthcoming 2nd World Space Congress II – the combination of 34th COSPAR Scientific Assembly and 53d International Astronautical Congress – which will be held in Houston, Texas, USA from October 10 to 19, 2002.

The August 2001 issue of the COSPAR Information bulletin is completely devoted to the 34th COSPAR Scientific Assembly. It contains the Call for Papers together with all additional useful information.

In 2001 four issues of the COSPAR Information bulletin were published containing scientific space mission news, news from other space organizations, list of satellites and space probe launches and current information on meeting, publications, etc.

COSPAR continues its publication activity. In 2001 the following issues of COSPAR journal *Advances in Space Research* appeared: Volume 27 numbers 1 to 12, and Volume 23 number 1.

Report composed by G.G. Chernyi

SCOR (Scientific Committee on Oceanic Research)

SCOR held the 35th Meeting of Executive Committee in Mar del Plata, Argentina on October 29-30, 2001, chaired by the President, Professor Bob Duce, in connection with the joint assemblies of IAPSO and IABO.

Current SCOR Working Groups, which may be of interest to IUTAM:

WG 111—*Coupling Winds, Waves and Currents in Coastal Models*

The group is developing a book tentatively entitled *Coupled Coastal Wind-Wave-Current Dynamics*, which is expected to be published within two years.

WG 114—*Transport and Reaction in Permeable Marine Sediments*

The group has developed plans for a Gordon Conference on their topic for 2003.

SCOR continues to be involved in large –scale scientific programs, including:

1. Joint Global Ocean Flux Study (JGOFS)

2. JGOFS has a variety of synthesis activities underway.
3. Global Ocean Ecosystems Dynamics (GLOBEC)
4. GLOBEC is in the midst of planning its 2nd Open Science Meeting, which will be held in Qingdao, China in October 2002.
5. Global Ecology and Oceanography of Harmful Algal Blooms (GEOHAB)
6. The GEOHAB SSC plans to meet in Finland in May 2002 to work on the GEOHAB Implementation Plan.
7. Surface Ocean-Lower Atmosphere Study (SOLAS)

The SOLAS SSC had a meeting in San Francisco in December 2001 to revise the Science Plan and begin work on the SOLAS Implementation Strategy.

Scientific Program under Development

SCOR/IGBP Planning Committee on Future Ocean Research in Earth System Science
The committee met in Barcelona, Spain in December 2001 to complete its Framework Report, which will be presented at the SC-IGBP meeting in Stockholm, Sweden in February 2002. A Transition Team was formed, which will be responsible to plan an Open Science Conference in Seattle, USA in April or May 2002.

The 36th SCOR General Meeting will take place in Sapporo, Japan, October 1-5, 2002.

Further information can be found in the SCOR Annual Report for 2001 available from Dr. Ed Urban, Executive Director, SCOR, Department of Earth and Planetary Sciences, The Johns Hopkins University, Baltimore, MD 12118, USA; e-mail: scor@jhu.edu; <http://www.jhu.edu/~scor>.

Report composed by W. Fennel

Agreement by and between IUTAM and Kluwer Academic Publishers B.V.

(hereinafter referred to as the "Publisher")

WHEREAS IUTAM and the Publisher agree that, as of January 1, 1999, Kluwer Academic Publishers is the official designated publisher of the proceedings of IUTAM Symposia (hereinafter referred to as "Symposia". The organizer or organizers of an IUTAM Symposium, being the chairmen of the Scientific Committee of the Symposium, are hereinafter referred to as the "Organizers");

WHEREAS IUTAM and the Publisher agree that each IUTAM proceedings volume published by the Publisher (hereinafter referred to as "Volume"), providing it is appropriate vis-à-vis subject matter will be published in the "Solid Mechanics and Its Applications" book series, or the "Fluid Mechanics and Its Applications" book series (hereinafter referred to as the "Series");

WHEREBY, in consideration of the mutual covenants and obligations herein contained, the parties hereto have agreed and do agree as follows:

1. Publication

1. Kluwer Academic Publishers shall be the preferred publisher of the proceedings of all IUTAM Symposia. Each proceeding accepted for publication shall appear as a Volume in the Series. In those cases where it is not appropriate, the Volume will be published out-of-series in the same style and format. Each Volume will appear in a hardbound version.
2. IUTAM will inform the Organizers of IUTAM Symposia of the possibility of publishing proceedings with the Publisher, and encourage them to contact the Publisher. Further contact between the Organizers and the Publisher will be bilateral. In addition, IUTAM will notify the Publisher sufficiently ahead of time which Symposia are to be organized and shall give the Publisher the names and addresses of the Organizers.
3. The Organizers of each individual Symposium, in accord with the IUTAM Scientific Committee, will remain free to propose to publish the proceedings in a suitable journal. In such case, the Organizers and the Publisher shall first jointly make an effort to investigate the availability of a suitable journal of Kluwer Academic Publications.
4. If the Organizers decide to publish a proceedings with the Publisher, as recommended by IUTAM, a separate contract will be concluded between the Organizers and the Publisher in which all details regarding publication will be settled. The terms and conditions relating to the publication of a given Volume will be a matter of negotiation between the Organizers and the Publisher, where the basic conditions are based on this present Agreement.
5. The Organizers act as the Editors of the Volume.

6. Typescripts for Volumes in the Series shall yield maximally about 450 printed pages. Exemption from this restriction can be agreed on by the Organizers and the Publisher. Further, the typescripts will not contain color pictures or color photographs, unless the Organizers and the Publisher agree otherwise.
7. The papers submitted for publication will be preferably in LaTeX format using the Kluwer style file. The Publisher will make the style file available, and the Publisher will assist in any questions regarding its use. The papers will be submitted in camera-ready, laser printed form (with the original figures pasted in the typescript) according to the guidelines given by the Publisher.
8. The proceedings of IUTAM Symposia will be published as Volumes in the Series, having a uniform design and recognizable cover design, including the IUTAM logo (see article 1.2). Proceedings that will be or have been published with other publishers do not form part of the Series.
9. Both the Publisher and the Organizers will do their very best in bringing the Volume out no later than one year after the Symposium has taken place. This requires that the Volume Editors who are responsible of assembling the final typescript should deliver it on time, in consultation with the Publisher.
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11. IUTAM grants the Publisher the use of the brand name "IUTAM Symposium on". This brand name is solely reserved for proceedings Volumes based on the Symposia that have been decided upon by the IUTAM General Assembly and entrusted to the Scientific Committee of the Symposium.
12. The brand name "IUTAM Symposium on" will be an integral part of the title page and the front and back cover of each Volume, and will feature in relevant promotional material.
13. The right to publish the IUTAM Symposium proceedings is not transferable by Kluwer Academic Publishers to any other publisher.
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4. The Publisher will be responsible for ensuring that the Volumes are produced to a high quality in a consistent style and format.
5. IUTAM and Volume Editors warrant to ensure to the best of their ability that no material in the Series contains anything that is obscene, objectionable, indecent, or of libelous or scandalous character.

3. Payments/Complimentary Copies

1. Royalties shall not be paid.
2. In lieu of royalties, the Organizers will get a minimum of 2 copies of each Volume free of charge.
3. The Publisher will provide the IUTAM Bureau with 9 free copies of each Volume.
4. Participants to the Symposium will be given the opportunity to order the Volume at a special prepublication price. The special Volume price will be included in the Symposium registration fee, so that each registered Participant will automatically receive a copy of the Volume upon publication. The special price includes tax (if applicable) and postage. The special price will depend on the number of participants and the size of the Volume and will be subject to negotiation between the Publisher and the Organizers of the Symposium concerned. In any event, if the page limit mentioned under 1.6 is adhered to, the special price to participants will not exceed Dfl. 140 (one hundred & forty Dutch guilders, currently approximately US\$93). Should inflation or costs increase appreciably this maximum will be subject to appraisal.
5. It will be the sole responsibility of the Organizers of a given Symposium to forward the appropriate, one-time payment to the Publisher. The Organizers will also supply the Publisher with adhesive labels with the names and addresses of the relevant participants.

4. Special Conditions

1. Should Kluwer decide to send a representative to a given Symposium, the Organizers will agree to provide display space free of charge for the display of relevant publications and, possibly, the dissemination of relevant promotion material to participants in the conference portfolios.
2. Kluwer will provide the Organizers with a subsidy of Dfl. 1000 (one thousand Dutch guilders) towards the costs of organizing the Symposium. This subsidy will be paid upon receipt of the contracts signed by the Organizers.

5. Termination

The Agreement between IUTAM and Kluwer Academic Publishers will remain in force for an initial period of 3 (three) years, starting January 1, 1999. The Agreement will be renewed for additional periods of 3 (three) years subject to confirmation of extension by both parties 12 months before the end of the initial 3-year period or subsequent 3-year periods. Either party may terminate the Agreement with or without cause upon 12 months written notice to the other.

6. Arbitration

Any disputes that may arise in connection with this present Agreement or the breach thereof shall be settled before a competent court of law at the site of the IUTAM Secretary General.

Statutes

Statuts de l'Union Internationale de Mécanique Théorique et Appliquée

- I «L'Union Internationale de Mécanique Théorique et Appliquée» ci-après dénommée «l'Union» est une organisation scientifique à la fois internationale et non-gouvernementale.
- II Les principaux objectifs de l'Union sont
- a) de constituer un lien entre personnes et organisations engagées dans le travail scientifique (théorique ou expérimental) concernant la mécanique ou les sciences associées;
 - b) d'organiser les congrès internationaux de mécanique théorique et appliquée par l'intermédiaire de son Comité permanent des Congrès (cf. Art. XII ci-après), et d'organiser d'autres réunions internationales sur des sujets relevant de la mécanique théorique et appliquée;
 - c) de s'engager en d'autres activités visant à promouvoir le développement de la mécanique, aussi bien théorique qu'appliquée, en tant que branche de la science.
- III L'autorité suprême de l'Union est son Assemblée Générale.
- Cette Assemblée détient le pouvoir de décider sur toute question affectant l'Union, notamment sur toute modification de ses Statuts. Sur des questions spécifiées, elle peut déléguer tout ou partie de ses pouvoirs à un ou à des organismes appropriés.
- La composition de l'Assemblée Générale est régie par l'article VI ci-après. Les réunions de l'Assemblée Générale doivent se tenir aux dates fixées par le Bureau de l'Union (cf. Art. XI ci-après) ou sur la demande de 10 Membres au moins de cette Assemblée.
- IV Dans toutes ses décisions, l'Assemblée Générale doit être guidée par la tradition de libre coopération scientifique internationale développée par les Congrès Internationaux de Mécanique Théorique et Appliquée. En poursuivant ses objectifs, l'Union respectera le principe général de non-discrimination et reconnaîtra le droit pour tout scientifique, partout dans le monde, d'adhérer ou de s'associer à une activité scientifique internationale sans rencontrer d'opposition pour motif de race, de religion, de philosophie politique, d'origine ethnique, de citoyenneté, de langage ou de sexe.
- V Dans les votes de l'Assemblée Générale, chaque membre ne dispose que d'une voix.

Pour une modification des Statuts, la majorité requise est de deux tiers des votes exprimés.

Pour toute autre décision la majorité simple des votes exprimés est requise. Tout membre se trouvant dans l'impossibilité d'être présent à une réunion peut désigner, à l'avance et par lettre adressée au Secrétaire Général, un autre membre qu'il charge de voter en son nom.

Dans l'intervalle entre réunions de l'Assemblée Générale, un vote peut être émis par correspondance sur proposition formulée par le Bureau (cf. Art. XI ci-après). En pareil cas, le résultat du vote n'est valablement obtenu que si le nombre des participants effectifs n'est pas inférieur aux deux tiers du nombre total des membres de l'Assemblée Générale.

VI* L'Assemblée Générale se compose:

- a) des représentants des «organisations adhérentes» (cf. art. VIII);
- b) des membres du Bureau (cf. art. XI);
- c) des membres cooptés par l'Assemblée Générale de l'Union;
- d) s'il y a lieu, et sur décision de l'Assemblée Générale, des représentants de comités ou groupes de scientifiques.

La durée de fonction de tout membre élu doit être précisée, lors de son élection, par l'Assemblée Générale. La durée de fonction des membres du Bureau doit coïncider avec celle de leur fonction au Bureau.

*) Adopté par l'Assemblée Générale de l'Union, le 2 Septembre 1990 à Vienne, Autriche

VII L'Assemblée Générale doit veiller à une représentation adéquate de tout groupe de scientifiques poursuivant des recherches en mécanique théorique ou appliquée et non représenté par une organisation adhérente.

VIII Les organisations de scientifiques en mécanique théorique ou appliquée (ou les unions de telles organisations) qui représentent effectivement une activité scientifique indépendante dans un pays ou dans un territoire bien défini peuvent être admises dans l'Union par l'Assemblée Générale comme «organisations adhérentes» pourvu que leur dénomination exclue tout malentendu quant à la qualification du pays ou du territoire en cause.

En principe, une seule organisation pourra être admise pour chaque pays ou chaque territoire.

- IX Chaque «organisation adhérente» dispose d'un certain nombre de représentants dans l'Assemblée Générale et doit acquitter une cotisation annuelle à l'Union (cf. Art. XIV ci-après).
- X Des organisations internationales dont les domaines principaux d'activité sont en étroite relation avec ceux de l'Union peuvent être admises par l'Assemblée Générale en qualité «d'organisations affiliées» à l'Union.

Chaque organisation affiliée a la faculté de désigner un observateur qui est invité à participer, sans droit de vote, à l'Assemblée Générale de l'Union. Le Bureau de l'Union (Article XI) a réciproquement la faculté de désigner un observateur, sans droit de vote, à l'organe ayant une responsabilité équivalente dans l'organisation affiliée.

L'organisation affiliée et l'Union sont tenues de s'informer mutuellement de toutes leurs activités importantes et des mesures affectant leur fonctionnement.

En préparant les rencontres scientifiques internationales qu'elles organisent, l'Union et chaque organisation affiliée sont tenues de prendre soigneusement en considération toutes les décisions déjà prises par l'Union et les organisations affiliées de manière à assurer la bonne coordination de toutes ces activités scientifiques.

Les organisations affiliées n'ont à payer aucune cotisation annuelle à l'Union.

- XI** Pour exécuter les décisions de l'Assemblée Générale et pour assurer entre ses sessions le travail de l'Union, l'Assemblée Générale élit les membres d'un Bureau pour une durée de quatre ans au plus. Le Bureau est composé d'un Comité Directeur (un Président, le précédent Président qui remplit la fonction de Vice-Président, un Secrétaire Général et un Trésorier) et de quatre autres personnes qui ont été membres de l'Assemblée Générale à un moment de la période précédant de quatre ans le moment de l'élection du Bureau.

Les membres, qui ne sont pas au Comité Directeur, ne peuvent recevoir plus de deux mandats consécutifs. Les membres du Bureau nouvellement élus entrent en fonction au premier novembre qui suit l'Assemblée Générale qui a procédé à leur élection.

Le Bureau doit se réunir au moins une fois par an. Tout membre du Bureau empêché de prendre part à une réunion de celui-ci peut désigner, par lettre adressée au Secrétaire Général, un autre membre de l'Assemblée Générale pour le remplacer.

C'est au Secrétaire Général que doivent être adressées toutes les questions concernant le fonctionnement de l'Union y compris ses relations avec les organisations adhérentes, affiliées ou autres.

Le domicile légal de l'Union se situe au domicile du Secrétaire Général.

Le Bureau a le droit de désigner un trésorier-assistant en tout pays où l'Union est titulaire d'un compte bancaire. Les trésoriers-assistants doivent être choisis parmi les membres de l'Assemblée Générale, mais non nécessairement parmi les membres du Bureau.

Le Bureau doit établir un budget prévisionnel pour l'année à venir, administrer les finances de l'Union et soumettre, chaque année, à l'Assemblée Générale un rapport financier.

Le Vice-Président doit normalement remplir les fonctions du Président pendant toute période où celui-ci se trouve empêché de les exercer.

Entre les réunions de l'Assemblée Générale, il incombe au Bureau de désigner un remplaçant temporaire pour remplir les fonctions du Vice-Président, du Secrétaire Général ou du Trésorier si cela s'avère nécessaire.

** Adoptés par l'Assemblée Générale de l'Union, le 2 Septembre 1990 à Vienne, Autriche

XII L'Assemblée Générale désigne un Comité permanent des Congrès chargé d'organiser à intervalles réguliers les Congrès Internationaux de Mécanique Théorique et Appliquée (ICTAM).

- a) Le Président de l'Union préside aussi ce Comité des Congrès.
- b) Les Membres de ce Comité sont nommés par l'Assemblée Générale; ce sont des scientifiques actifs en mécanique théorique ou appliquée, n'appartenant pas nécessairement à l'Assemblée Générale.
- c) Le Comité des Congrès nomme un Secrétaire, sans précision de durée.
- d) Les règles de fonctionnement du Comité des Congrès sont soumises à l'approbation de l'Assemblée Générale.

XIII Les ressources financières de l'Union sont constituées par:

- a) les cotisations annuelles des «organisations adhérentes»;
- b) les dons et subventions que l'Union peut recevoir.

L'Union doit tenir une liste de ses bienfaiteurs où doivent être mentionnés pour chaque année les noms des personnes ou institutions qui ont accordé à l'Union des dons, des legs ou des subventions.

XIV Le nombre des représentants d'une «organisation adhérente» et le montant de la cotisation annuelle qu'elle doit acquitter sont défini dans le tableau suivant, par la catégorie à laquelle elle désire appartenir, et avec l'accord de l'Assemblée Générale.

Catégorie	Nombre de représentants	Nombre d'unités de la cotisation annuelle
I	1	1
II	2	3
III	3	5
IV	4	8
V	5	12

Le montant de l'unité de cotisation annuelle est fixé par l'Assemblée Générale, au moins une année précédente celle à laquelle cette cotisation devient exigible.

XV*** Toute proposition de modification des Statuts, présentée ou par le Bureau ou par le Secrétaire Général, et ayant reçu l'appui d'au moins dix membres de l'Assemblée Générale ayant le droit de vote, devra être envoyée aux membres de l'Assemblée Générale avec l'ordre du jour de la réunion de l'Assemblée Générale. Le débat sur de telles propositions devra s'effectuer au cours de la première session et le vote au cours de la seconde (Article V).

*** Article XV adopté par l'Assemblée Générale de l'Union, le 28 Août 1994 à Amsterdam

Règles de fonctionnement du Comité des Congrès de l'Union

1. Le Comité des Congrès se réunit au moins une fois lors de chaque Congrès.
2. Le Comité des Congrès doit nommer un Comité Exécutif chargé de prendre en son nom toutes les décisions nécessaires pendant la période qui s'écoule entre deux réunions successives, et de lui en faire rapport à sa prochaine réunion. Le Comité Exécutif comprend le président, le secrétaire du Comité des Congrès, et un ou plusieurs membres désignés par le comité des Congrès.
3. L'organisation effective d'un Congrès est confiée à un Comité local d'Organisation, élu par le pays ou l'organisation qui invite, et ce Comité est également responsable de la publication des Comptes rendus du Congrès. Le Comité d'Organisation fera son rapport au Comité des Congrès soit au cours du Congrès qu'il organise, soit avant, s'il le juge préférable.
4. Le Comité d'Organisation devra obtenir l'approbation du Comité des Congrès (normalement par l'intermédiaire du Comité Exécutif) pour toutes les question relevant de la politique générale du Comité des Congrès, en particulier pour celles qui concernent:

- 4.1. le but du Congrès;
 - 4.2. la sélection des communications pour le Congrès;
 - 4.3. le choix des conférences générales pour le Congrès;
 - 4.4. la désignation des présidents de sessions du Congrès;
 - 4.5. les principes généraux régissant les arrangements financiers du Congrès.
5. Le Comité d'Organisation percevra, de tous les membres du Congrès, une contribution (dont le montant sera proposé par le Comité du Congrès et approuvé par le Bureau) afin de couvrir les dépenses administratives du Comité du Congrès. Ces contributions seront reversées à l'IUTAM immédiatement après le Congrès.

Procédés pour l'élection du Bureau de l'IUTAM****

1. Lors de l'Assemblée Générale (AG) précédant celle au cours de laquelle le nouveau Bureau doit être élu, un Comité Electoral (CE) doit être élu comprenant le Président de IUTAM (qui assure la présidence de ce Comité) et deux à quatre membres de l'AG, non-membres du Bureau en exercice.
2. A la suite de cette élection, le CE doit inviter les membres de l'AG à faire connaître à son Président, dans des délais fixés, leurs suggestions de candidatures pour le Bureau, c'est-à-dire pour les charges de Président (P) de Secrétaire Général (S), de Trésorier (T) et pour quatre autres postes. Toutes ces suggestions doivent être traitées confidentiellement par le CE.
3. Prenant en compte toutes les suggestions reçues, le CE doit soumettre au Secrétaire Général les noms proposés comme candidats au Bureau: un seul nom pour les charges P,S,T et un ou plusieurs noms pour chacun des quatre autres postes (W,X,Y,Z). Le CE doit s'assurer que tous les candidats ainsi proposés sont prêts à accepter leur élection. Toutes ces propositions sont portées par le Secrétaire Général à la connaissance des membres de l'AG avant la première session de l'AG au cours de laquelle le nouveau Bureau doit être élu.
4. Lors de cette première session d'autres propositions de candidatures peuvent être proposées pour chacun des postes P, S, T, W, X, Y, Z. Aucun candidat ne peut être proposé pour plus d'un seul poste.
5. Avant la seconde session de l'AG au cours de laquelle le nouveau Bureau doit être élu, chaque proposition envisagée au point 4 ci dessus pour pouvoir être acceptée doit recevoir l'appui d'au moins dix membres de l'AG ayant le droit de vote au moyen d'une déclaration écrite et signée et faire l'objet d'un engagement écrit de la personne

proposée indiquant qu'elle est prête à accepter son élection. Toute proposition ne remplissant pas ces conditions sera retirée.

6. Pour chacun des postes P, S, T, W, X, Y, S, l'AG est appelé à désigner le titulaire par un vote mettant en compétition les candidats restants. S'il y a plusieurs candidats pour un poste, le vote doit avoir lieu au scrutin secret.

**** Procédure adoptée par l'Assemblée Générale de l'Union, le 28 Août 1994 à Amsterdam

Procédure pour l'élection de membres cooptés par l'Assemblée Générale*****

1. La procédure s'applique à l'élection et à la réélection des membres cooptés par l'Assemblée Générale mentionnés à l'article VI c) des Statuts.
2. Les propositions émanant des membres de l'Assemblée Générale ayant le droit de vote en vue de l'élection des membres cooptés, doivent parvenir au Bureau au moins trois mois avant l'Assemblée Générale au cours de laquelle ces propositions sont prises par elle en considération, en règle générale celle qui se tient pendant le Congrès International de Mécanique Théorique et Appliquée. Toutes ces propositions doivent être traitées confidentiellement par le Bureau.
3. Après avoir pris en compte toutes les propositions ainsi reçues le Bureau présente à l'Assemblée Générale une liste de celles qui sont jugées pouvoir recevoir de la part de l'Assemblée Générale un soutien raisonnable, pourvu cependant que le nombre total des membres cooptés n'excède pas $1/8$ environ du nombre total des membres ayant le droit de vote. La liste de ces propositions est communiquée à tous les membres de l'Assemblée Générale pendant la première session de la réunion de l'Assemblée au cours de laquelle doit avoir lieu le vote.
4. Une liste de propositions différente de celle présentée par le Bureau n'est recevable que si elle a recueilli le soutien d'au moins dix membres de l'Assemblée Générale avant la seconde session.
5. L'Assemblée Générale vote sur les listes de candidats qui font l'objet des paragraphes 3 et 4.

***** Procédure adoptée par l'Assemblée Générale de l'Union, le 26 Août 1992 à Haïfa, Israël

Statutes of the International Union of Theoretical and Applied Mechanics

- I "The International Union of Theoretical and Applied Mechanics" hereinafter called "the Union" is an international non-governmental scientific organization.
- II The principal objectives of the Union are
- a) to form a link between persons and organizations engaged in scientific work (theoretical or experimental) in mechanics or in related sciences;
 - b) to organize international congresses of theoretical and applied mechanics through a standing Congress Committee (Article XII), and to organize other international meetings for subjects falling within the field of theoretical and applied mechanics;
 - c) to engage in other activities meant to promote development of mechanics, both theoretical and applied, as a branch of science.
- III The highest authority of the Union is its General Assembly.

The General Assembly has the power to decide all questions affecting the Union, including alterations of the Statutes. On specified questions it may delegate its power to appropriate bodies.

The composition of the General Assembly is regulated in Article VI.

Meeting of the General Assembly will take place at times decided by the Bureau (Article XI) or on the request of at least 10 members of the General Assembly.

- IV In all its decisions the General Assembly shall be guided by the tradition of free international scientific cooperation, developed in the International Congresses for Theoretical and Applied Mechanics.

In pursuing its objectives the Union shall observe the basic policy of non-discrimination and affirm the rights of scientists throughout the world to adhere to or to associate with international scientific activity without regard to race, religion, political philosophy, ethnic origin, citizenship, language or sex.

- V In voting every member of the General Assembly shall dispose of one vote. For an alteration of the Statutes the majority required is 2/3 of the votes brought forward. For all other decisions a simple majority of the votes brought forward is required.

Any member who is unable to attend a meeting may by a letter to the Secretary General constitute another member of the General Assembly as proxy.

Between meetings of the General Assembly voting may be carried out by correspondence upon proposals made by the Bureau (Article XI); in this case decisions will be valid only provided the number of persons taking part in the vote is not less than 2/3 of the total membership of the General Assembly.

VI* The General Assembly is composed of

- a) representatives of the adhering organizations (Article VIII);
- b) members of the Bureau (Article XI);
- c) members-at-large;
- d) representatives of committees and groups of scientists, if so decided by the General Assembly.

The term of an elected member shall be determined by the General Assembly at the time of the election. The term of members of the Bureau shall coincide with their term of service on the Bureau.

* Adopted by the General Assembly on September 2, 1990, in Vienna (Austria)

VII The General Assembly shall provide for an adequate representation of any group of scientists carrying out research in theoretical or applied mechanics and not represented by an adhering organization.

VIII Organizations of scientists in theoretical or applied mechanics (or unions of such organizations) which effectively represent independent scientific activity in a country or in a definite territory can be admitted by the General Assembly as adhering organizations of the Union provided they can be listed under a name that will avoid any misunderstanding about the country or territory represented.

In general only one organization from each country or territory will be admitted.

IX Each adhering organization shall have representatives in the General Assembly of the Union, and pay an annual subscription to the Union in accordance with Article XIV.

X International organizations mainly occupied in fields closely related to that of the Union can be admitted by the General Assembly as affiliated organizations of the Union.

Each affiliated organization has the right to appoint an observer, who is invited to take part in the General Assembly without voting rights. The Bureau of the Union

(Article X) has the reciprocal right to appoint a nonvoting observer to the corresponding council or other executive body of the affiliated organization.

The affiliated organization and the Union are mutually obliged to keep each other informed about all important activities of and organizational measures taken.

In organizing international scientific meetings the Union and each of the affiliated organizations are obliged to consider carefully all measures already taken by the Union and its affiliated organizations in order to coordinate such international scientific activities.

Affiliated organizations pay no annual dues to the Union.

XI** To execute the decisions of the General Assembly and to carry out work between meetings, the General Assembly elects members of a Bureau for a period of at most four years. The Bureau consists of the officers (President, the retiring President who serves as Vice-President, Secretary-General, and Treasurer) and four other persons who shall have been members of the General Assembly at some time within the four years preceding the time of election to the Bureau. The maximum continuous period of service as a member of the Bureau, other than an officer, is limited to eight years. Newly elected members of the Bureau enter into office on the date of November 1, following the General Assembly at which they were elected. The Bureau will meet at least every year. A member of the Bureau who is prevented from attending a meeting may by letter to the Secretary-General designate another member of the General Assembly as a replacement.

The Secretary-General will act as a permanent centre for all matters affecting the Union, including relations with adhering, affiliated and other organizations.

The legal domicile of the Union shall be the place where the Secretary-General lives.

The Bureau is authorized to appoint Assistant-Treasurers in those countries where the Union has a bank account.

The Assistant-Treasurers must be members of the General Assembly but need not to be members of the Bureau.

The Bureau shall draft a budget for each coming year, and shall administer the finances. The Bureau shall submit an annual financial report to the General Assembly.

The Vice-President shall normally fulfil the duties of the President should the President become unable to discharge them.

Between meetings of the General Assembly the Bureau shall decide who shall undertake the duties of the Vice President, Secretary-General, or Treasurer should a temporary replacement be necessary.

**Adopted by the General Assembly on September 2, 1990, in Vienna (Austria)

XII The General Assembly establishes a standing Congress Committee that is responsible for the organization of International Congresses of Theoretical and Applied Mechanics at regular intervals.

- a) The President of the Union shall also serve as President of the Congress Committee.
- b) The members of the Congress Committee are appointed by the General Assembly as scientists active in theoretical or applied mechanics and need not be members of the General Assembly.
- c) The Congress Committee appoints a Secretary, without stated terms of office.
- d) The rules of procedure of the Congress Committee shall be approved by the General Assembly.

XIII The financial means of the Union are formed by:

- a) the annual subscriptions of the adhering organizations;
- b) gifts and grants.

The Union shall maintain a roll of benefactors on which shall be inscribed annually the names of those persons or institutions which have accorded gifts, legacies or other subventions to the Union.

XIV The number of representatives of an adhering organization and the amount of the annual subscription to be paid by that organization will be regulated according to one of the following categories, as proposed by the adhering organization and after approval of the General Assembly of the Union:

Category	Number of Representatives	Units of annual subscription
I	1	1
II	2	3
III	3	5
IV	4	8
V	5	12

Changes in the amount of the unit annual subscription will be decided by the General Assembly not less than one year in advance.

XV*** Any proposal for alteration of the Statutes either prepared by the Bureau or supported by statements to the General-Secretary signed by at least ten voting members of the General Assembly with voting rights, shall be sent to members of the General Assembly with the Agenda for a meeting of the General Assembly. Such proposals shall be discussed during the first session of that meeting and voted upon during the second session (Article V).

*** Article XV adopted by the General Assembly on August 28, 1994, in Amsterdam

Rules of procedure for the Congress Committee of IUTAM

1. The Congress Committee meets at least once at every Congress.
2. The Congress Committee may appoint an Executive Committee to take all necessary actions on its behalf in the period between two successive Congresses, and to report to it at its next meeting. The Executive Committee will consist of the president, the secretary and one or more members appointed by the Congress Committee.
3. The actual organization of a Congress is delegated to a local Organizing Committee, elected by the host-country or host-organization, which is also responsible for publication of its Proceedings. The Organizing Committee will report to the Congress Committee either during or, if it sees fit, before the Congress which it organizes.
4. The Organizing Committee will obtain the approval of the Congress Committee (normally through the Executive Committee) with regard to all matters affecting the general policy of the Congress Committee, in particular with regard to:
 - 4.1. the scope of the Congress;
 - 4.2. the screening of papers of the Congress;
 - 4.3. the selection of general lectures for the Congress;
 - 4.4. the appointment of chairmen of sessions of the Congress;
 - 4.5. the broad principles regarding financial arrangements for the Congress.
5. The Organizing Committee will levy a fee (the level to be recommended by the Congress Committee and approved by the Bureau) for administrative expenses of the

Congress Committee, from all Congress members. This fee will be paid over to IUTAM after the Congress.

Procedure for election of the Bureau of IUTAM****

1. At the General Assembly (GA) preceding the one at which the new Bureau is to be elected, an Electoral Committee (EC) shall be elected, consisting of the President of IUTAM (who shall act as Chairman of the EC) and two to four members of the GA who are not members of the current Bureau.
2. Following its election, the EC shall invite from members of the GA, within a specified time-limit, suggestions for candidates for the Bureau, viz., for the Offices of President (P), Secretary-General (S) and Treasurer (T), and for the four non-Officer positions. All suggestions shall be treated confidentially by the EC.
3. Taking account of all suggestions received, the EC shall submit to the Secretary-General nominations for candidates for election to the Bureau: one name for each of the Officer positions (P, S, T) and one or more names for each of the non-Officer positions (W, X, Y, Z). The EC will make sure that the candidates thus nominated are willing to accept an election. These nominations shall be conveyed by the Secretary-General to the GA in advance of the first session of the meeting of the GA at which the new Bureau is to be elected.
4. At this first session, additional candidates may be proposed by members of the GA for each and any of the positions P, S, T, W, X, Y, Z. No candidate may be proposed for more than one position.
5. Before the second session of the GA at which the new Bureau is to be elected, the proposals under clause 4 above shall be accepted if supported by statements to the Secretary-General each signed by at least ten (voting) members of the GA and by written confirmation that each nominee is willing to accept election; otherwise they shall be considered withdrawn.
6. The GA shall vote separately on the surviving nominations for each of the positions P, S, T, W, X, Y, Z. In any case in which there is more than one candidate for a position, the vote shall be by secret ballot.

**** Procedure adopted by the General Assembly on August 28, 1994, in Amsterdam

Procedure for electing Members-at-Large of the General Assembly*****

1. This procedure shall apply for the election and re-election of the Members-at-Large of the General Assembly provided for in Article VI(c) of the Statutes.
2. Proposals, by members of the General Assembly with voting rights, for Members-at-Large must be received by the Bureau at least three months before the meeting of the General Assembly at which proposals are to be considered, normally during the International Congresses of Theoretical and Applied Mechanics (ICTAM). All proposals will be treated confidentially by the Bureau.
3. Taking into account all material received, the Bureau will present to the General Assembly such proposals as it deems will have at least a reasonable support by the General Assembly, provided however that the total number of Members-at-Large is not to exceed approximately one eighth (1/8) of the total General Assembly membership with voting rights. Such proposals will be circulated to all members of the General Assembly during the first session of meeting of the Assembly at which the proposals are to be voted on.
4. Proposals not identical with those presented by the Bureau are considered to be withdrawn, unless they are sustained and supported by at least ten members of the General Assembly before its second session.
5. The General Assembly will vote on those candidates mentioned in the proposals of paragraphs 3 and 4.

***** Procedure adopted by the General Assembly on August 26, 1992, in Haifa, Israel

List of Publications

Four categories of IUTAM publications can be distinguished:

a) Annual Reports

Since 1948, the Union has published a Report every year with detailed information on its activities. These Annual Reports are preserved at the IUTAM Archive at CISM, Udine, Italy.

The IUTAM Annual Reports over the last five years are available upon request from the IUTAM Secretariat.

b) Proceedings of IUTAM Symposia

These are only available by ordering directly from the publisher.

c) Proceedings of the International Congresses on Theoretical and Applied Mechanics (ICTAM)

These are only available by direct ordering from the publisher.

d) Publications on the history of IUTAM

Proceedings of IUTAM Symposia

The Proceedings of IUTAM Symposia published since 1990 are listed below. The names of the editors and of the publisher are given in every case. A complete list of all published Proceedings can be found at the IUTAM website <http://www.iutam.net>.

1990

90-1 *IUTAM Symposium on Mechanical Modeling of New Electromagnetic Materials* (Stockholm, Sweden, 2-6 April 1990).

The Proceedings of the Symposium, edited by R.K.T. Hsieh, have been published by Elsevier, Amsterdam, 1990. ISBN 0-444-88518-8.

90-2 *IUTAM Symposium on Dynamical Problems of Rigid-Elastic Systems and Structures*

(Moscow, USSR, 23-27 May 1990).

The Proceedings of the Symposium, edited by N.V. Banichuk, D.M. Klimov and W. Schiehlen, have been published by Springer-Verlag, Berlin, 1991. ISBN 3-540-53788-0.

90-3 *IUTAM Symposium on Inelastic Deformation of Composite Materials* (Troy, New York, USA, 29 May-1 June 1990).

The Proceedings of the Symposium, edited by G.J. Dvorák, have been published by Springer-Verlag, New York, 1991. ISBN 0-387-97458-X.

- 90-4 *IUTAM Symposium on Dynamics of Marine Vehicles and Structures in Waves* (Uxbridge, UK, 24-17 June 1990).
The Proceedings of the Symposium, edited by W.G. Price, P. Temarel and A.J. Keane, have been published by Elsevier, Amsterdam, 1991. ISBN 0-444-89020-3.
- 90-5 *IUTAM Symposium on Separated Flows and Jets* (Novosibirsk, USSR, 9-13 July 1990).
The Proceedings of the Symposium, edited by V.V. Kozlov and A.V. Dovgal, have been published by Springer-Verlag, Berlin, 1991. ISBN 3-540-53762-7.
- 90-6 *IUTAM Symposium on Fluid Mechanics of Stirring and Mixing* (La Jolla, California, USA, 20-24 August 1990).
The Proceedings of the Symposium, edited by A. Acrivos, have been published in the journal "Physics of Fluids A", ISSN 0899-8213, Vol. 3 (1991), pp. 1009-1469.
- 90-7 *IUTAM Symposium on Nonlinear Hydrodynamic Stability and Transition* (Sophia-Antipolis, Nice, France, 3-7 September 1990).
The Proceedings of the Symposium, edited by G. Iooss, have been published in the journal "European Journal of Mechanics B/ Fluids", ISSN 0997-7546, Vol. 10 (1991), No. 2-Suppl., 3-334.
- 90-8 *IUTAM Symposium on Contact Load and Local Effects in Thin-Walled Plates and Shell Structures* (Prague, CSFR, 4-7 September 1990).
The Proceedings of the Symposium, edited by V. Krupka and M. Drdácýk, have been published by Springer-Verlag, Berlin, 1992. ISBN 3-540-53551-9.
- 90-9 *IUTAM Symposium on Creep in Structures* (Cracow, Poland, 10-14 September 1990).
The Proceedings of the Symposium, edited by M. Zyczkowski, have been published by Springer-Verlag, Berlin, 1992. ISBN 3-540-53786-4.
- 1991**
- 91-1 *IUTAM Symposium on Aerothermodynamics in Combustors* (Taipei, Taiwan, 3-5 June 1991).
The Proceedings of the Symposium, edited by R.S.L. Lee, J.H. Whitelaw and T.S. Wung, have been published by Springer-Verlag, Berlin, 1992. ISBN 3-540-55404-1.
- 91-2 *IUTAM Symposium on Mechanical Effects of Welding* (Lulea, Sweden, 10-14 June 1991).

- The Proceedings of the Symposium, edited by L. Karlsson, L.E. Lindgren and M. Jonsson, have been published by Springer-Verlag, Berlin, 1992. ISBN 3-540-55240-5.
- 91-3 *IUTAM Symposium on Nonlinear Stochastic Mechanics*
(Torino, Italy, 1-5 July 1991).
The Proceedings of the Symposium, edited by N. Bellomo and F. Casciati, have been published by Springer-Verlag, Berlin, 1992. ISBN 3-540-55545-5.
- 91-4 *IUTAM Symposium on Mechanics of Fluidized Beds*
(Stanford, California, 1-4 July 1991).
No Proceedings of the Symposium have been published.
The "Report of a Symposium on Mechanics of Fluidized Beds" by G.M. Homsy, R. Jackson and J.R. Grace has been published in the "Journal of Fluid Mechanics" (1992), Vol. 236, 477-495.
- 91-5 *IUTAM Symposium on Breaking Waves*
(Sydney, Australia, 15-19 July 1991).
The Proceedings of the Symposium, edited by M.L. Banner and R. Grimshaw, have been published by Springer-Verlag, Berlin, 1992. ISBN 3-540-55944-2.
- 91-6 *IUTAM Symposium on Constitutive Relations for Finite Deformations of Polycrystalline Metals*
(Beijing, China, 22-25 July 1991).
The Proceedings of the Symposium, edited by Ren Wang and D.C. Drucker, have been published by Springer-Verlag, Berlin, 1992. ISBN 3-540-55128-X.
- 91-7 *IUTAM Symposium on Finite Inelastic Deformations - Theory and Application*
(Hannover, Germany, 19-23 August 1991).
The Proceedings of the Symposium, edited by D. Besdo and E. Stein, have been published by Springer-Verlag, Berlin, 1992. ISBN 3-540-55849-7.
- 91-8 *IUTAM Symposium on Interpretation of Time Series from Mechanical Systems*
(Warwick, UK, 26-30 August 1991).
The Proceedings of the Symposium, edited by P.G. Drazin and G.P. King, have been published by North Holland, Elsevier Science Publ, Amsterdam, Physica D Nonlinear Phenomena, Vol. 58, 1992. ISSN 0167-2789.
- 91-9 *IUTAM Symposium on Microgravity Fluid Mechanics*
(Bremen, Germany, 2-6 September 1991).
The Proceedings of the Symposium, edited by H.J. Rath, have been published by Springer-Verlag, Berlin, 1992. ISBN 3-540-55122-0.

- 91-10 *IUTAM Symposium on Local Mechanics Concepts for Composite Material Systems*
(Blacksburg, Virginia, 27-31 October 1991).
The Proceedings of the Symposium, edited by J.N. Reddy and K.L. Reifsnider, have been published by Springer-Verlag, Berlin, 1992. ISBN 3-540-55547-1.
- 1992**
- 92-1 *IUTAM Symposium on Optimal Control of Mechanical Systems*
(Moscow, Russia, 19-25 April 1992).
The Proceedings of the Symposium, co-edited by F.L. Chernousko, have been published in Russian in the form of a (special) issue of the journal "Izvestiya of the Russian Academy of Sciences, Tekhnicheskaya Kibernetika, No. 1, Jan.-Febr. 1993", ISSN 0002-3388; and in the English translation of this journal published by Scripta Technica Inc., A. Wiley Company, New York.
- 92-2 *IUTAM Symposium on Inverse Problems in Engineering Mechanics*
(Tokyo, Japan, 11-15 May 1992).
The Proceedings of the Symposium, edited by M. Tanaka and H.D. Bui, have been published by Springer-Verlag, Berlin, 1993. ISBN 3-540-56345-8.
- 92-3 *IUTAM Symposium on Optimal Design with Advanced Materials*
The Frithiof I. Niordson Volume (Lyngby, Denmark, 18-20 August 1992).
The Proceedings of the Symposium, edited by P. Pedersen, have been published by Elsevier Science Publishers, Amsterdam, 1993. ISBN 0444-89869-7.
- 92-4 *IUTAM Symposium on Aerothermochemistry of Spacecraft and Associated Hypersonic Flows*
(Marseille, France, 1-4 September 1992).
The Proceedings of the Symposium, edited by R. Brun and A.A. Chikhaoui, have been published by Jouve, 18, rue Saint-Denis, F-75001 Paris. Dépôt légal: Janvier, 1994. No. 215515N.
- 92-5 *IUTAM Symposium on Bluff-Body Wakes, Dynamics and Instabilities*
(Göttingen, Germany, 7-11 September 1992).
The Proceedings of the Symposium, edited by H. Eckelmann, J.M.R. Graham, P. Huerre and P.A. Monkewitz, have been published by Springer-Verlag, Berlin, 1993. ISBN 3-540-56594-9.
- 92-6 *IUTAM Symposium on Fluid Dynamics of High Angle of Attack*
(Tokyo, Japan, 13-17 September 1992).
The Proceedings of the Symposium, edited by R. Kawamura and Y. Aihara, have been published by Springer-Verlag, Berlin, 1993. ISBN 3-540-56593-0.

- 92-7 *IUTAM Symposium on Eddy Structure Identification in Free Turbulent Shear Flow*
(Poitiers, France, 12-14 October 1992).
The Proceedings of the Symposium, edited by J.P. Bonnet and M.N. Glauser, have been published by Kluwer Academic Publishers, Dordrecht, The Netherlands, 1993. ISBN 0-7923-2449-8.
- 1993**
- 93-1 *IUTAM Symposium on Probabilistic Structural Mechanics: Advances in Structural Reliability Methods*
(San Antonio, Texas, USA, 7-10 June 1993).
The Proceedings of the Symposium, edited by P.D. Spanos and Y.-T. Wu. have been published by Springer-Verlag, Berlin, 1994. ISBN 3-540-57709-2.
- 93-2 *IUTAM Symposium on Computational Mechanics and Materials*
(Providence, RI, USA, 15-18 June 1993).
The Proceedings of the Symposium have been published as a special issue in a journal "Modelling and Simulation in Materials Science and Engineering", edited by M. Ortiz and C.F. Shih, Vol 2 No 3A 421-782 May 1994, ISSN: 0965-0393.
- 93-3 *IUTAM Symposium on Nonlinearity and Chaos in Engineering Dynamics*
(University College, London, 19-23 July 1993).
The Proceedings of the Symposium, edited by J.M.T. Thompson and S.R. Bishop, have been published by John Wiley & Sons, Chichester, UK, 1994. ISBN 0-471-94458-0.
- 93-4 *IUTAM Symposium on Nonlinear Instability of Nonparallel Flows*
(Potsdam, NY, USA, 26-31 July 1993).
The Proceedings of the Symposium, edited by S.P. Lin, W.R.C. Phillips, D.T. Valentine, have been published by Springer-Verlag, Berlin, 1994. ISBN 3-540-57679-7.
- 93-5 *IUTAM Symposium on Nonlinear Waves in Solids*
(Victoria, British Columbia, Canada, 15-20 August 1993).
The Proceedings of the Symposium, edited by Joanne L. Wegner and Frederick R. Norwood, have been published by The American Society of Mechanical Engineers, New York, 1995. ISBN 0-7918-0645-6.
- 93-6 *IUTAM Symposium on Identification of Mechanical Systems*
(Wuppertal, Germany, 23-27 August 1993).
The Proceedings of the Symposium, edited by P.C. Müller, have been announced to be published by Springer-Verlag, Berlin, 1995.

- 93-7 *IUTAM Symposium on Discrete Structural Optimization*
(Zakopane, Poland, 31 August-3 September 1993).
The Proceedings of the Symposium, edited by W. Gutkowski, have been published by Springer-Verlag, Berlin, 1994. ISBN 3-540-57679-X.
- 93-8 *IUTAM Symposium on Bubble Dynamics and Interface Phenomena*
(Birmingham, UK, 6-9 September 1993).
The Proceedings of the Symposium, edited by J.R. Blake, J.M. Boulton-Stone and N.H. Thomas, have been published by Kluwer Academic Publishers, Dordrecht, The Netherlands, 1994. ISBN 0-7923-3008-0.
- 93-9 *IUTAM Symposium on Fracture of Brittle, Disordered Materials: Concrete, Rock and Ceramics*
(Brisbane, Australia, 20-24 September 1993).
The Proceedings of the Symposium, edited by G. Baker and B.L. Karihaloo, have been published by E & FN Spon, London, UK, 1995. ISBN 0-419-19050-3.
- 93-10 *IUTAM Symposium on Impact Dynamics*
(Beijing, China, 11-15 October 1993).
The Proceedings of the Symposium, edited by Zheng Zhemin (Che-Min Cheng) and Tan Qingming, have been published by Peking University Press, Beijing, China, 1994. ISBN 7-301-02489-4/0 338.
- 93-11 *IUTAM Symposium on Numerical Simulation of Non-Isothermal Flow of Viscoelastic Liquids*
(Kerkrade, The Netherlands, 1-3 November 1993).
The Proceedings of the Symposium, edited by J.F. Dijksman and G.D.C. Kuiken have been published by Kluwer Academic Publishers, Dordrecht, The Netherlands, 1995. ISBN 0-7923-3262-8.
- 1994**
- 94-1 *IUTAM Symposium on Liquid-Particle Interactions in Suspension Flow*
(Grenoble, France, 18-22 April 1994).
The chairman G. Cognet has not edited the Proceedings (Oct. 1996).
- 94-2 *IUTAM Symposium on Waves in Liquid / Gas and Liquid / Vapor Two-Phase Systems*
(Kyoto, Japan, 9-13 May 1994).
The Proceedings of the Symposium, edited by Shigeki Morioka and L. van Wijngaarden, have been published by Kluwer Academic Publishers, Dordrecht, The Netherlands, 1995. ISBN 0-7923-3424-8.

- 94-3 *IUTAM / ISIMM Symposium on Structure and Dynamics of Nonlinear Waves in Fluids*
(Hanover, Germany, 17-20 August 1994).
The Proceedings of the Symposium, edited by A. Mielke and K. Kirchgässner, have been published as Volume 7 of the Advanced Series in Nonlinear Dynamics, by World Scientific Publishing, Singapore, 1995. ISBN 981-02-2124-X.
- 94-4 *IUTAM Symposium on Microstructure-Property Interactions in Composite Materials*
(Aalborg, Denmark, 23-25 August 1994).
The Proceedings of the Symposium, edited by R. Pyrz, have been published by Kluwer Academic Publishers, Dordrecht, The Netherlands, 1995. ISBN 0-7923-3427-2.
- 94-5 *IUTAM / ISIMM Symposium on Anisotropy, Inhomogeneity and Nonlinearity in Solid Mechanics*
(Nottingham, UK, 30 August-3 September 1994).
The Proceedings of the Symposium, edited by D.F. Parker and A.H. England, have been published by Kluwer Academic Publishers, Dordrecht, The Netherlands, 1995. ISBN 0-7923-3594-5.
- 94-6 *IUTAM Symposium on Laminar-Turbulent Transition*
(Sendai, Japan, 5-9 September 1994).
The Proceedings of the Symposium, edited by R. Kobayashi, have been published by Springer Verlag, Berlin, 1995. ISBN 3-540-59297-0.
- 94-7 *IUTAM Symposium on Mechanical Problems in Geodynamics*
(Beijing, China, 5-9 September 1994).
The Proceedings of the Symposium, edited by R. Wang and K. Aki, have been published in the journal "PAGEOPH (Pure and Applied Geophysics)", Part I in vol.145, no.3/4, Dec.1995 (ISSN 0033-4553), and Part II in vol.146, no.3/4, Feb.1996 (ISBN 3-7643-5412-7). A bound volume has been announced to be published in 1996.
- 94-8 *IUTAM Symposium on The Active Control of Vibrations*
(Bath, UK, 5-8 September 1994).
The Proceedings of the Symposium, edited by C.R. Burrows and P.S. Keogh have been published by Mechanical Engineering Publications Limited, London, 1994. ISBN 0-85298-916-4.
- 94-9 *IUTAM Symposium on Size-Scale Effects in the Failure Mechanisms of Materials and Structures*
(Turin, Italy, 3-7 October 1994).

The Proceedings of the Symposium, edited by A. Carpinteri, have been published by E & FN Spon, London, UK, 1995. ISBN 0-419-20520-9.

- 94-10 *IUTAM Symposium on Mechanics and Combustion of Droplets and Sprays* (Taipei, Taiwan, 6-10 December 1994).
The Proceedings of the Symposium, edited by H.H. Chiu, have been published by Begell House, Inc. New York, USA, 1995, pp. 396. ISBN 1-56700-051-7.
Selected papers under the title Mechanics and Combustion of Droplets and Sprays have been published by Begell House Publishers at 79 Madison Avenue, New York, NY 10016, Fax (+1) 212-213-8368, edited by N.A. Chigier.

1995

- 95-1 *IUTAM Symposium on Optimization of Mechanical Systems* (Stuttgart, Germany, 26-31 March 1995).
The Proceedings of the Symposium, edited by D. Bestle and W. Schiehlen, have been published by Kluwer Academic Publishers, Dordrecht, The Netherlands, 1996. ISBN 0-7923-3830-8.
- 95-2 *IUTAM Symposium on Asymptotic Methods for Turbulent Shear Flows at High Reynolds Numbers* (Bochum, Germany, 28-30 June 1995).
The Proceedings of the Symposium, edited by K. Gersten, have been published by Kluwer Academic Publishers, Dordrecht, The Netherlands, 1996. ISBN 0-7923-4138-4.
- 95-3 *IUTAM Symposium on Advances in Nonlinear Stochastic Mechanics* (Trondheim, Norway, 3 - 7 July 1995).
The Proceedings of the Symposium, edited by A. Naess and S. Krenk, have been published by Kluwer Academic Publishers, Dordrecht, The Netherlands, 1996. ISBN 0-7923-4193-7.
- 95-4 *IUTAM Symposium on Nonlinear Instability and Transition in Three-Dimensional Boundary Layers* (Manchester, UK, 17-20 July 1995).
The Proceedings of the Symposium, edited by P.W. Duck and P. Hall, have been published by Kluwer Academic Publishers, Dordrecht, The Netherlands, 1996. ISBN 0-7923-4079-5.
- 95-6 *IUTAM Symposium on Micromechanics of Plasticity and Damage of Multiphase Materials* (Paris, France, 29 August-1 September 1995).
The Proceedings of the Symposium, edited by A. Pineau and A. Zaoui, have been published by Kluwer Academic Publishers, Dordrecht, The Netherlands, 1996. ISBN 0-7923-4188-0.

95-7 *IUTAM Symposium on Nonlinear Analysis of Fracture*
(Cambridge, UK, 3-7 September 1995).
The Proceedings of the Symposium, edited by J. Willis, have been published by Kluwer Academic Publishers, Dordrecht, The Netherlands, 1997. ISBN 0-7923-4378-6.

95-9 *IUTAM Symposium on Combustion in Supersonic Flows*
(Poitiers, France, 2-6 October 1995).
The Proceedings of the Symposium, edited by M. Champion and B. Deshaies, have been published by Kluwer Academic Publishers, Dordrecht, The Netherlands, 1997. ISBN 0-7923-4313-1.

1996

96-1 *IUTAM Symposium on Interaction between Dynamics and Control in Advanced Mechanical Systems*
(Eindhoven, The Netherlands, 21-26 April 1996).
The Proceedings of the Symposium, edited by D.H. van Campen have been published by Kluwer Academic Publishers, Dordrecht, The Netherlands, 1997. ISBN 0-7923-4429-4.

96-2 *IUTAM Symposium on Innovative Computational Methods for Fracture and Damage*
(Dublin, Ireland, 30 June-5 July 1996).
The Proceedings of the Symposium, edited by P. E. O' Donoghue, M. D. Gilchrist and K. B. Broberg, have been published in the "Computational Mechanics Journal", 19, 447- 552; 20, 3-198, 1997.

96-3 *IUTAM Symposium on Variable Density Low Speed Turbulent Flows*
(Marseille, France, 7-10 July 1996). Co-sponsored by ICSU.
The Proceedings of the Symposium, edited by Louis Fulachier, John L. Lumley and Fabien Anselmet, have been published by Kluwer Academic Publishers, Dordrecht, The Netherlands, 1997. ISBN 0-7923-4602-5.

96-4 *IUTAM Symposium on Mechanics of Granular and Porous Materials*
(Cambridge, UK, 15-17 July 1996).
The Proceedings of the Symposium, edited by N.A. Fleck and A.C.F. Cocks, have been published by Kluwer Academic Publishers, Dordrecht, The Netherlands, 1997. ISBN 0-7923-4553-3.

1997

97-1 *IUTAM Symposium on Lubricated Transport of Viscous Materials*
(Tobago, 7-10 January 1997).

- The Proceedings of the Symposium, edited by Harold Ramkisson, have been published by Kluwer Academic Publishers, Dordrecht, The Netherlands, 1997. ISBN 0-7923-4897-4.
- 97-2 *IUTAM Symposium on Transformation Problems in Composite and Active Materials*
(Cairo, Egypt, 9-12 March 1997).
The Proceedings of the Symposium, edited by Y.A. Bahei-El-Din and G.J. Dvorak, have been published by Kluwer Academic Publishers, Dordrecht, The Netherlands, 1998. ISBN 0-7923-5122-3.
- 97-3 *IUTAM Symposium on Non-Linear Singularities in Deformation and Flow*
(Haifa, Israel, 17-21 March 1997).
The Proceedings of the Symposium, edited by D. Durban and J.R.A. Pearson, have been published by Kluwer Academic Publishers, Dordrecht, The Netherlands, 1998. ISBN 0-7923-5349-8.
- 97-4 *IUTAM Symposium on Variations of Domains and Free-Boundary Problems in Solid Mechanics*
(Paris, France, 22-25 April 1997).
The Proceedings of the Symposium, edited by P. Argoul, M. Frémond and Q.S. Nguyen, have been published by Kluwer Academic Publishers, Dordrecht, The Netherlands, 1998. ISBN 0-7923-5450-8.
- 97-5 *IUTAM Symposium on Simulation and Identification of Organized Structures in Flows*
(Lyngby, Denmark, 25-29 May 1997).
The Proceedings of the Symposium, edited by J.N. Sørensen, E.J. Hopfinger, and N. Aubry, have been published by Kluwer Academic Publishers, Dordrecht, The Netherlands, 1999. ISBN 0-7923-5603-9.
- 97-6 *IUTAM Symposium on Discretization Methods in Structural Mechanics*
(Vienna, Austria, 1-6 June 1997).
The Proceedings of the Symposium, edited by H.A. Mang and F.G. Rammerstorfer, have been published by Kluwer Academic Publishers, Dordrecht, The Netherlands 1999. ISBN 0-7923-5591-1.
- 97-7 *IUTAM Symposium on Material Instabilities in Solids*
(Delft, The Netherlands, 9-13 June 1997)
The Proceedings of the Symposium, edited by R. de Borst and E. van der Giessen, have been published by John Wiley & Sons, Chichester, UK, 1998. ISBN 0-471-97460-9.
- 97-8 *IUTAM Symposium on Statistical Energy Analysis*
(Southampton, UK. 8-11 July 1997).

The Proceedings of the Symposium, edited by F.J. Fahy and W.G Price, have been published by Kluwer Academic Publishers, Dordrecht, The Netherlands, 1998, ISBN 0-7923-5457-5.

- 97-9 *IUTAM Symposium on Rheology and Computation*
(Sydney, Australia, 20-25 July 1997).
No formal Proceedings of the Symposium have been published. Selected papers have been published in several 1999-volumes of the "Journal of Non-Newtonian Fluid Mechanics", with a footnote attached to each of those papers.
- 97-10 *IUTAM Symposium on New Applications of Nonlinear and Chaotic Dynamics in Mechanics*
(Ithaca, NY, USA, 27 July-1 August 1997).
The Proceedings of the Symposium, edited by Francis C. Moon, have been published by Kluwer Academic Publishers, Dordrecht, The Netherlands, 1998. ISBN 0-7923-5276-9.
- 97-11 *IUTAM Symposium on Computational Methods for Unbounded Domains*
(Boulder, USA, 3-7 August 1997).
The Proceedings of the Symposium, edited by Thomas L. Geers, have been published by Kluwer Academic Publishers, Dordrecht, The Netherlands, 1998. ISBN 0-7923-5266-1.
- 97-12 *IUTAM Symposium on Micro- and Macrostructural Aspects of Thermoplasticity*
(Bochum, Germany, 25-29 August 1997).
The Proceedings of the Symposium, edited by O.T. Bruhns and E. Stein, have been published by Kluwer Academic Publishers, Dordrecht, The Netherlands, 1998. ISBN 0-7923-5265-3.
- 97-13 *IUTAM Symposium on Dynamics of Slender Vortices*
(Aachen, Germany, 31 August - 3 September 1997).
The Proceedings of the Symposium, edited by E. Krause and K. Gersten, have been published by Kluwer Academic Publishers, Dordrecht, The Netherlands, 1998. ISBN 0-7923-5041-3.
- 97-14 *IUTAM Symposium on Rheology of Bodies with Defects*
(Beijing, China, 2-6 September 1997).
The Proceedings of the Symposium, edited by Ren Wang, have been published by Kluwer Academic Publishers, Dordrecht, The Netherlands, 1998. ISBN 0-7923-5297-1.
- 1998**
- 98-1 *IUTAM Symposium on Three-Dimensional Aspects of Air-Sea Interaction*
(Nice, France, 17-21 May 1998)

- The Proceedings of the Symposium, edited by F. Dias and C. Khariff, have been published as a special issue of the "European Journal of Mechanics B / Fluids", Vol. 18, No. 3 (1999)
- 98-2 *IUTAM Symposium on Synthesis in Bio Solid Mechanics*
(Lyngby, Denmark, 24-27 May 1998).
The Proceedings of the Symposium, edited by Pauli Pedersen and Martin P. Bendsøe, have been published by Kluwer Academic Publishers, Dordrecht, The Netherlands, 1999. ISBN 0-7923-5615-2.
- 98-3 *IUTAM/IUGG Symposium on Developments in Geophysical Turbulence*
(Boulder, USA, 16-19 June 1998).
The Proceedings of the Symposium, edited by R.M. Kerr and Y. Kimura, have been published by Kluwer Academic Publishers, Dordrecht, The Netherlands, 2000 ISBN 0-7923-6673-5.
- 98-4 *IUTAM Symposium on Viscoelastic Fluid Mechanics*
(Stanford, USA, 21-25 June 1998).
A Report on this Symposium by E.S.G. Shaqfeh and a collection of selected papers have been published in the "Journal of Non-Newtonian Fluid Mechanics", Vol. 82 (1999), pp. 127-457.
- 98-5 *IUTAM Symposium on Unilateral Multibody Contacts*
(Munich, Germany, 3-7 August 1998).
The Proceedings of the Symposium, edited by F. Pfeiffer and Ch. Glocker, have been published by Kluwer Academic Publishers, Dordrecht, The Netherlands, 1999. ISBN 0-7923-6030-3.
- 98-6 *IUTAM/IFTOMM Symposium on Synthesis of Nonlinear Dynamical Systems*
(Riga, Latvia, 24-28 August 1998).
The Proceedings of the Symposium, edited by E. Lavendelis and M. Zakrzhevsky, have been published by Kluwer Academic Publishers, Dordrecht, The Netherlands, 1999. ISBN 0-7923-6106-7.
- 98-7 *IUTAM Symposium on Advanced Optical Methods and Applications in Solid Mechanics*
(Poitiers, France, 31 August-4 September 1998).
The Proceedings of the Symposium, edited by A. Lagarde, have been published by Kluwer Academic Publishers, Dordrecht, The Netherlands, 2000. ISBN 0-7923-6604-2.
- 98-8 *IUTAM/IASS Symposium on Deployable Structures: Theory and Applications*
(Cambridge, UK, 6-9 September 1998).

The Proceedings of the Symposium, edited by S. Pellegrino and S.D. Guest, have been published by Kluwer Academic Publishers, Dordrecht, The Netherlands, 2000. ISBN 0-7923-6516-X.

- 98-9 *IUTAM Symposium on Mechanics of Passive and Active Flow Control* (Göttingen, Germany, 7-11 September 1998).
The Proceedings of the Symposium, edited by G.E.A. Meier and P.R. Viswanath, have been published by Kluwer Academic Publishers, Dordrecht, The Netherlands, 1999. ISBN 0-7923-5928-3.
- 1999**
- 99-1 *IUTAM Symposium on Nonlinearity and Stochastic Structural Dynamics* (Madras, India, 4-8 January 1999).
The Proceedings of the Symposium, edited by S. Narayanan and R.N. Iyengar, have been published by Kluwer Academic Publishers, Dordrecht, The Netherlands, 2000. ISBN 0-7923-6733-2.
- 99-2 *IUTAM Symposium on Mechanical and Electromagnetic Waves in Structured Media* (Sydney, NSW, Australia, 18-22 January 1999).
The Proceedings of the Symposium, edited by R.C. McPhedran, L.C. Botten and N.A. Nicorovici, have been published by Kluwer Academic Publishers, Dordrecht, The Netherlands, 2001. ISBN 0-7923-7038-4.
- 99-3 *IUTAM Symposium on Recent Developments in Nonlinear Oscillations of Mechanical Systems* (Hanoi, Vietnam, 2-5 March 1999).
The Proceedings of the Symposium, edited by N. Van Dao and E.J. Kreuzer, have been published by Kluwer Academic Publishers, Dordrecht, The Netherlands, 2000. ISBN 0-7923-6470-8.
- 99-4 *IUTAM/IACM/IABEM Symposium on Advanced Mathematical and Computational Mechanics Aspects of the Boundary Element Method* (Cracow, Poland, 31 May-3 June 1999).
The Proceedings of the Symposium, edited by T. Burczynski, have been published by Kluwer Academic Publishers, Dordrecht, The Netherlands, 2001. ISBN 0-7923-7081-3.
- 99-5 *IUTAM Symposium on Segregation in Granular Flows* (Cape May, New Jersey, USA, 5-10 June 1999).
The Proceedings of the Symposium, edited by A.D. Rosato and D.L. Blackmore, have been published by Kluwer Academic Publishers, Dordrecht, The Netherlands, 2000. ISBN 0-7923-6547-X.

- 99-6 *IUTAM Symposium on Nonlinear Wave Behaviour in Multi Phase Flow*
(Notre Dame, Indiana, USA, 7-9 July 1999)
The Proceedings of the Symposium edited by H.C. Chang, have been published by Kluwer Academic Publishers, Dordrecht, The Netherlands, 2000. ISBN 0-7923-6454-6.
- 99-7 *IUTAM Symposium on Theoretical and Numerical Methods in Continuum Mechanics of Porous Materials*
(Stuttgart, Germany, 5-10 September 1999).
The Proceedings of the Symposium, edited by W. Ehlers, have been published by Kluwer Academic Publishers, Dordrecht, The Netherlands, 2001. ISBN 0-7923-6766-9.
- 99-8 *IUTAM Symposium on Laminar-Turbulent Transition*
(Sedona, Arizona, USA, 12-18 September 1999).
The Proceedings of the Symposium, edited by H. Fasel and W.S. Saric, have been published by Springer-Verlag, Berlin/Heidelberg/New York, 2000. ISBN 3-540-67947-2.
- 99-9 *IUTAM Symposium on Geometry and Statistics of Turbulence*
(Hayama, Japan, 1-5 November 1999).
The Proceedings of the Symposium edited by T. Kambe, T. Nakano and T. Miyauchi, have been published by Kluwer Academic Publishers, Dordrecht, The Netherlands, 2001. ISBN 0-7923-6711-1.
- 2000**
- 00-1 *IUTAM Symposium on Creep in Structures*
(Nagoa, Japan, 3-7 April 2000).
The Proceedings of the Symposium, edited by S. Murakami and N. Ohno, have been published by Kluwer Academic Publishers, Dordrecht, The Netherlands, 2000. ISBN 0-7923-6737-5.
- 00-2 *IUTAM Symposium on Bluff Body Wakes and Vortex-induced Vibration*
(Marseille, France, 13-16 June 2000).
The Proceedings of the Symposium edited by T. Leweke, P.W. Bearman and C.H.K. Williamson, have been published by Academic Press in the Journal of Fluids and Structures, Special Issue on Bluff Body Wakes and Vortex-Induced Vibrations, London, 2001. ISSN 0889-9746, Vol. 15, nos. 3/4.
- 00-2a *IUTAM Symposium on Scaling Laws in Ice Mechanics and Ice Dynamics*
(Fairbanks, Alaska, USA, 13-16 June 2000).
The Proceedings of the Symposium, edited by J.P. Dempsey and H.H. Shen, have been published by Kluwer Academic Publishers, Dordrecht, The Netherlands, 2001. ISBN 1-4020-0171-1.

- 00-3 *IUTAM Symposium on Mechanical Waves for Composite Structures Characterization*
(Chania, Crete, Greece, 14-17 June 2000).
The Proceedings of the Symposium, edited by D.A. Sotiropoulos, have been published by Kluwer Academic Publishers, Dordrecht, The Netherlands, 2001. ISBN 0-7923-7164-X.
- 00-4 *IUTAM Symposium on Advances in Mathematical Modelling of Atmosphere and Ocean Dynamics*
(Limerick, Ireland, 2-7 July 2000).
The Proceedings of the Symposium, edited by P.F. Hodnett, have been published by Kluwer Academic Publishers, Dordrecht, The Netherlands, 2001. ISBN 0-7923-7075-9.
- 00-5 *IUTAM Symposium on Free Surface Flows*
(Birmingham, United Kingdom, 10-14 July 2000).
The Proceedings of the Symposium, edited by A.C. King and Y.D. Shikhmurzaev, have been published by Kluwer Academic Publishers, Dordrecht, The Netherlands, 2001. ISBN 0-7923-7085-6.
- 00-6 *IUTAM Symposium on Diffraction and Scattering in Fluid Mechanics and Elasticity*
(Manchester, England, 17-20 July 2000)
The Proceedings of the Symposium, edited by I.D. Abrahams, P.A. Martin and M.J. Simon, have been published by Kluwer Academic Publishers, Dordrecht, The Netherlands, 2002. ISBN 1-4020-0590-3.
- 00-8 *IUTAM Symposium on Smart Structures and Structronic Systems*
(Magdeburg, Germany, 26-29 September 2000).
The Proceedings of the Symposium, edited by U. Gabbert and H.S. Tzou, have been published by Kluwer Academic Publishers, Dordrecht, The Netherlands, 2001. ISBN 0-7923-6968-8.
- 2001**
- 01-5 *IUTAM Symposium on Analytical and Computational Fracture Mechanics of Non-Homogeneous Materials*
(Cardiff, England, 18-22 June 2001).
The Proceedings of the Symposium, edited by B.L. Karihaloo, have been published by Kluwer Academic Publishers, Dordrecht, The Netherlands, 2002. ISBN 1-4020-0510-5

Proceedings of the International Congresses on Theoretical and Applied Mechanics (ICTAM)

Until September 4, 1964 the organization of the International Congresses for Applied Mechanics was supervised by the "International Committee for the Congresses of Applied Mechanics" and for each Congress the organization was separately entrusted to a local Organizing Committee who also undertook the publication of the Proceedings. Consequently, there is no central point from which Proceedings may be ordered, and for each volume, application must be made to the publishers who took care of that particular volume.

Since September 4, 1964 the same task will be fulfilled by the Standing Congress Committee of IUTAM, and local Organizing Committees to be established.

The titles of the volumes and the names of the publishing firms are given below.

1st Congress, Delft (Netherlands), 22–26 April 1924.

Proceedings of the First International Congress for Applied Mechanics, Delft 1924, edited by C.B. Biezeno and J.M. Burgers (one vol.). Technische Boekhandel en Drukkerij J.Waltman Jr., Delft, 1925. No more copies are available for sale at Delft.

2nd Congress, Zürich (Switzerland), 12–17 September 1926.

Verhandlungen - Comptes rendus - Proceedings of the 2nd International Congress for Applied Mechanics, Zürich, 12–17 September 1926, herausgegeben von E. Meissner (one vol.). Orell Füssli Verlag, Zürich und Leipzig, 1927.

3rd Congress, Stockholm (Sweden), 24–29 August 1930.

Verhandlungen - Comptes rendus - Proceedings of the 3rd International Congress for Applied Mechanics, herausgegeben von A.C.W. Oseen und W. Weibull (3 vol.). AB. Sveriges Litografiska Tryckerier, Stockholm, 1931.

4th Congress, Cambridge (UK), 3–9 July 1934.

Proceedings of the Fourth International Congress for Applied Mechanics, Cambridge, UK, 3–9 July, 1934 (one vol.). University Press, Cambridge (UK), 1935.

5th Congress, Cambridge (Massachusetts, USA), 12–16 September 1938.

Proceedings of the Fifth International Congress for Applied Mechanics, held at Harvard University and the Massachusetts Institute of Technology, Cambridge, Massachusetts, September 12–16, 1938, edited by J.P. den Hartog and H. Peters (one vol.), John Wiley and Sons, Inc., New York (USA), and Chapman and Hall Ltd., London (UK), 1939.

6th Congress, Paris (France), 22–29 September 1946.

Proceedings not published (was given in the hands of Gauthier-Villars, Paris).

7th Congress, London (UK), 5–11 September 1948.

Proceedings of the Seventh International Congress for Applied Mechanics, 1948, published by the Organizing Committee (Introduction, Vol. I, Vol. II - Parts 1 and 2, Vol. III, Vol. IV).

8th Congress, Istanbul (Turkey), 20–28 August 1952.

Proceedings published by the Organizing Committee (Vol. I, Vol. II). Faculty of Sciences, University of Istanbul, P.O. Box 245, Istanbul (Turkey), 1953.

9th Congress, Brussels (Belgium), 5–13 September 1956.

Proceedings published by the Organizing Committee (Vol. I to Vol. VIII). Free University of Brussels, 50, avenue Franklin-Roosevelt, Brussels (Belgium), 1957.

10th Congress, Stresa (Italy), 31 August–7 September 1960.

Proceedings published by the Consiglio Nazionale delle Ricerche, Piazzelle delle Scienze 7, Roma (Italia), printed by Elsevier Publishing Company, Amsterdam–New York, 1962.

11th International Congress on Theoretical and Applied Mechanics (ICTAM), Munich (Germany), 30 August–5 September 1964.

The Proceedings, edited by H. Görtler, have been published by Springer–Verlag, Heidelberger Platz 3, Berlin (Germany), 1966.

12th International Congress on Theoretical and Applied Mechanics (ICTAM), Stanford, Cal. (USA), 26–31 August 1968.

The Proceedings, edited by M. Hetényi and W.G. Vincenti, have been published by Springer–Verlag, Berlin (Germany), 1969.

13th International Congress on Theoretical and Applied Mechanics (ICTAM), Moscow (USSR), 21–26 August 1972.

The Proceedings, edited by E. Becker and G.K. Mikhailov, have been published by Springer–Verlag, Berlin (Germany), 1973.

14th International Congress on Theoretical and Applied Mechanics (ICTAM), Delft (Netherlands), 30 August–4 September 1976.

The Proceedings, edited by W.T. Koiter, have been published by North–Holland Publishing Company, Amsterdam–New York–Oxford, 1976, 1977.

15th International Congress on Theoretical and Applied Mechanics (ICTAM), Toronto (Canada), 17–23 August 1980

The Proceedings, edited by F.P.J. Rimrott and B. Tabarrok, have been published by North–Holland Publishing Company, Amsterdam–New York–Oxford 1980.

16th International Congress on Theoretical and Applied Mechanics (ICTAM),
Lyngby (Denmark), 19–25 August 1984.

The Proceedings, edited by F.I. Niordson and N. Olhoff, have been published by Elsevier Science Publishers (North–Holland), Amsterdam, 1985.

17th International Congress on Theoretical and Applied Mechanics (ICTAM),
Grenoble (France), 21–27 August 1988.

The Proceedings, edited by P. Germain, M. Piau and D. Caillerie, have been published by North–Holland, Elsevier Science Publishers, Amsterdam, 1989. ISBN 0-444-87302-3.

18th International Congress on Theoretical and Applied Mechanics (ICTAM),
Haifa (Israel), 22–28 August 1992.

The Proceedings, edited by S.R. Bodner, J. Singer, A. Solan and Z. Hashin, have been published by Elsevier Science Publishers, Amsterdam, 1993.
ISBN 0-444-88889-6.

19th International Congress on Theoretical and Applied Mechanics (ICTAM),
Kyoto (Japan), 25-31 August 1996.

The Proceedings, edited by T. Tatsumi, E. Watanabe, T. Kambe, have been published by Elsevier Science Publishers, Amsterdam, 1997.
ISBN 0-444-82446-4.

20th International Congress on Theoretical and Applied Mechanics (ICTAM),
Chicago (USA), 27 August-2 September 2000.

The Proceedings, entitled “Mechanics for a new Millenium and edited by H.Aref and J.W.Phillips, have been published by Kluwer Academic Publishers, Dordrecht, The Netherlands, 2001. ISBN 0-7923-7156-9.

Publications on the history of IUTAM*IUTAM – A Short History,*

edited by S. Juhasz, has been published by Springer– Verlag, Berlin, Germany, 1988. ISBN 3–540–50043–X.

The short history is dedicated to the memory of Professor Theodore von Karman who had an essential role in the formation of IUTAM. Contributions by S. Juhasz, Sir James Lighthill, G. Battimelli, J. Hult, N.J. Hoff, D.C. Drucker and F.I. Niordson are included in the book.

Mechanics at the Turn of the Century,

edited by W. Schiehlen and L. van Wijngaarden, has been published by Shaker Verlag, Aachen, Germany, 2000. ISBN 3-8265-7714-0.

This Report is the result of an initiative of the Bureau of IUTAM to provide some landmarks on the developments in Mechanics during the 20th Century, to report on the 50 years of impulse to Mechanics by the International Union of Theoretical and Applied Mechanics (IUTAM), to visualize by a poster Meters of Motion on the occasion of the 20th International Congress of Theoretical and Applied Mechanics (ICTAM), to look ahead on a very personal basis and to show the broad international involvement of scientists in IUTAM in recent years.

The booklet “Mechanics at the Turn of the Century” is accessible free of charge on the website of Shaker Verlag. The internet address is www.shaker.de and search for Schiehlen as the author. Moreover, this booklet is available upon request at the IUTAM Secretariat

Please note again:

The publications listed above, with the exception of the Annual Reports over the last five years and the booklet “Mechanics at the Turn of the Century”, are not available at the IUTAM Secretariat. Please order directly from the publisher. Details of all IUTAM publications may be found at <http://www.iutam.net>

List of Addresses

Abrahams, Prof. I.D.

University of Manchester, Dept. of Mathematics
Oxford Road, M13 9PL Manchester UK

Achenbach, Prof. J. D.

Northwestern University, Center for Quality Eng. and Failure Prevention, 2137 Sheridan
Road, IL 60208-3 Evanston USA

Acrivos, Prof. A.

City College of the City University of New York, The Benjamin Levich Institute,
T-1M, City College,
NY 10031 New York USA

Adrian, Prof. R. J.

University of Illinois at Urbana-Champaign, Dept. of Theoretical and Applied
Mechanics, 216 Talbot Laboratory, 104 South Wright Street, IL 61801 Urbana USA

Ahzi, Prof. S.

University Louis Pasteur, IPST-ULP, IMFS-UMR 7507
15-17 Rue du Marechal Lefebvre, F 67100 Strasbourg France

Al-Athel, Dr. Saleh A.

King Abdulaziz City for Science and Technology,
P.O. Box 6086, 11442 Riyadh Saudi Arabia

Alfirevic, Prof. I.

University of Zagreb, Faculty of Mechanical Engineering and Naval Architecture,
Institute of Applied Mechanics
Ivana Lucica 5, HR-10000 Zagreb Croatia

Appa Rao, Dr. T.V.S.R.

CSIR Campus, Structural Engineering Research Centre
Taramani, Chennai - 600113 India

Arantes e Oliveira, Prof. E. R.

Technical University of Lisbon, Dept. of Civil Engineering, Instituto Superior Technico,
Av. Rovisco Pais,
1049-001 Lisboa Portugal

Aref, Prof. H.

University of Illinois at Urbana-Champaign, Dept. of Theoretical and Applied
Mechanics, 216 Talbot Laboratory, 104 South Wright Street, IL 61801 Urbana USA

Arinc, Prof. F.
Middle East Technical University, Dept. of Mechanical Engineering, E 104, 06531
Ankara Turkey

Bai, Prof. Y.
Chinese Academy of Sciences, Institute of Mechanics
15 Zhong Guan Cun Road, 100080 Beijing China

Bajer, Dr. K.
Warsaw University, Institute of Geophysics
ul. Pasteura 7, 02-093 Warszawa Poland

Barthes-Biesel, Prof. D.
Universite de Technologie de Compiègne, Génie Biologique
BP 20529, F-60 205 Compiègne Cedex France

Battjes, Prof. J. A.
Delft University of Technology, Dept. of Civil Engineering
Stevinweg 1, NL-2628 CN Delft Netherlands

Bearman, Prof. P.W.
Imperial College of Science, Technology and Medicine, Dept. of Aeronautics, Prince
Consort Road, SW7 2BY London UK

Belhaq, Prof. M.
Faculté des Sciences Aïn Chock, Département de Physique
Maârif, BP 5366 Casablanca Morocco

Belytschko, Prof. T.
Northwestern University, Dept. of Mechanical Engineering
2145 Sheridan Road, IL 60208 3 Evanston USA

Benaroya, Prof. H.
Rutgers University, Dept. of Mech. and Aerospace Engineering, 98 Brett Road, NJ
08854-8 Piscataway USA

Bendsøe, Prof. M.P.
Technical University of Denmark, Dept. of Mathematics
Building 303, DK-2800 LYNGBY Denmark

Bevilacqua, Prof. L.
National Laboratory for Scientific Computing (LNCC), Dept. of Mechanics, Av. Getúlio
Vargas, 333, Quitandinha, Petropolis, 25651-070 Rio de Janeiro Brazil

Bianchi, Prof. G.
Politecnico di Milano, Dipartimento di Meccanica
Piazza Leonardo da Vinci 32, 20133 Milano Italy

Blake, Prof. J.
University of Birmingham, School of Mathematics and Statistics, Edgbaston, B15 2TT
Birmingham UK

Bodner, Prof. S. R.
Technion - Israel Institute of Technology, Faculty of Mechanical Engineering, Technion
City, 32000 Haifa Israel

Bogy, Prof. D. B.
University of California Berkeley, Dept. of Mechanical Eng., 6195 Etcheverry Hall, CA
94720-1 Berkeley USA

Boley, Prof. B.
Columbia University, Dept. of Civil Engineering and Engineering Mechanics. School of
Eng. and Applied Science, 610 S.W. Mudd Building, New York, NY 10027 USA

Bonnecaze, Prof. R.T.
The University of Texas at Austin, Dept. of Chemical Engineering, Austin, TX 78712
USA

Bonnet, Prof. M.
CNRS et Ecole Polytechnique, Laboratoire de Mecanique des Solides, 91128 Palaiseau
cedex France

Borst, Prof. R.
Delft University of Technology, Dept. of Aerospace Engineering, Kluyverweg 6, 2629
HT Delft, Netherlands

Boström, Prof. A.
Chalmers University of Technology, Dept. of Applied Mechanics, S- 412 96 Göteborg
Sweden

Bourgeois, Prof. R.
Royal Military Academy, Dept. of Civil Engineering
Avenue Renaissance 30, B-1040 Brussels Belgium

Braza, Dr. M.
Unite Mixte de Recherche 5502 CNRS-INPT/ENSEEIH-UPS, Institut de Mecanique
des Fluides de Toulouse
Avenue du Prof. Camille Soula, F-31400 Toulouse France

Brilla, Prof. J.

Slovak Academy of Engineering Sciences,
Radlinskeho 11, SK 813 68 Bratislava Slovakia

Burczynski, Prof. T.

Silesian University of Technology, Dept. for Strength of Materials and Comp.
Mechanics, Faculty of Mechanical Eng., Konarskiego 18a, PL-44-100 Gliwice Poland

Calladine, Prof. C.R.

University of Cambridge, Dept. of Engineering
Trumpington Street, CB2 1PZ Cambridge UK

Campen, Prof. D.H.

Eindhoven University of Technology, Dept. of Mechanical Engineering,
Den Dolech 2, PO Box 513,
5600 MB Eindhoven Netherlands

Candel, Prof. S.

Ecole Centrale Paris, Laboratoire d'Energétique Moléculaire et Macroscopique,
Combustion (EM2C), Grande Voie des Vignes, F 92295 Chatenay Malabry France

Cardon, Prof. A.H.

Free University of Brussels (V.U.B.), Dept. Mechanics of Materials and Constructions
(MEMC), V.U.B. -TW(KB) - MEMC, Pleinlaan 2, B-1050 Brussels Belgium

Carpenter, Prof. P.W.

University of Warwick, School of Engineering
Coventry, CV4 7AL UK

Cercignani, Prof. C.

Politecnico di Milano, Dipartimento di Matematica
Piazza Leonardo da Vinci, 32, I-20133 Milano Italy

Chang, Prof. H.C.

University of Notre Dame, Dept. of Chemical Engineering
IN 46556 Notre Dame USA

Chen, Prof. W.-H.

National Tsing Hua University, Dept. of Power Mechanical Engineering, Hsinchu
Taiwan

Chernousko, Prof. L.

Russian Academy of Sciences, Institute for Problems in Mechanics, pr. Vernadskogo
101-1, 117526 Moscow Russia

Chernyi, Prof. G. G.
Moscow State University, Institute of Mechanics
1, Michurinski Prospect, 117192 Moscow Russia

Cowin, Prof. S.C.
The City University of New York, School of Engineering, New York Center for
Biomedical Eng., 2166 Broadway, apartment 12D, New York, NY 10031-9198 USA

Crandall, Prof. S.H.
Massachusetts Institute of Technology, Dept. of Mechanical Engineering, 3-360 MIT,
MA 02139 Cambridge USA

Cristescu, Prof. N.D.
University of Florida, Dept. of Aerospace Eng., Mechanics and Eng. Science, 231
Aerospace Building, P.O. Box 116250
Gainesville, Fl. 32611-6250 USA

Crocker, Prof. M. J.
Auburn University, Dept. of Mechanical Engineering
201 Ross Hall, AL 36849 Auburn USA

Cruse, Prof. T.A.
Vanderbilt University, Dept. of Mechanical Engineering
TN 37235 Nashville USA

Daigle, Dr. G. A.
National Research Council, Institute for Microstructural Sciences, 1191 Montreal Road,
K1A 0R6 Ottawa Canada

Dempsey, Prof. J.P.
Clarkson University, Dept. of Civil and Environmental Engineering, Potsdam, NY
13699-5710 USA

Dias, Prof. L.
Ecole Normale Superieure de Cachan, CenCentre de Mathematiques et
de Leurs Application
94235 Cachan cedex France

Dijksman, Dr. J. F.
Philips Research Laboratories, Group Mechanics, Heat & Particle Optics,
Prof. Holstlaan 4 (WB-1-57),
NL-5656 AA Eindhoven Netherlands

Dowell, Prof. E. H.

Duke University, Dept. of Mechanical Engineering and Materials Science, 185 Hudson Hall, NC 27708 Durham USA

Durban, Prof. D.

Technion-Israel Institute of Technology, Dept. of Aeronautics and Space Engineering, Technion City, 32000 Haifa Israel

Dvorák, Dr. R.

Institute of Thermomechanics, Academy of Sciences of the Czech Republic, Fluid Dynamics Division, Dolejskova 5, CZ-18200 Praha Czech Republic

Ehlers, Prof. W.

University of Stuttgart, Institute of Applied Mechanics
Pfaffenwaldring 7, D-70569 Stuttgart Germany

Ellyin, Prof. F.

The University of Alberta, Dept. of Mechanical Engineering, Advanced Composite Materials Engineering Group, Rm. 4-9 Mechanical Eng. Bldg., T6G 2G8 Edmonton, Alberta Canada

Engelbrecht, Prof. J.

Institute of Cybernetics, Dept. of Mechanics and Applied Mathematics, Akadeemia 21, EE-12618 Tallinn Estonia

Erzhanov, Prof. Zh. S.

National Academy of Sciences of the Republic of Kazakhstan, Abai Avenue, 31, 480091 Almaty Kazakhstan

Fasel, Prof. H.

University of Arizona, Tucson, AZ USA

Fennel, Prof. W.

Institut für Ostseeforschung Warnemuende (IOW),
D-18119 Rostock Germany

Fernholz, Prof. H.-H.

Technische Universität Berlin, Hermann-Föttinger Institut für Strömungsmechanik, Strasse des 17. Juni 135, D-10623 Berlin Germany

Fiszdon, Prof. W.
Polish Academy of Science, Institute of Fundamental Technological Research, ul.
Swietokrzyska 21,
PL-00 049 Warsaw Poland

Fleck, Prof. N. A.
Cambridge University, Dept. of Engineering
Trumpington St., CB2 1PZ Cambridge UK

Freund, Prof. L. B.
Brown University, Division of Engineering
182 Hope Street, RI 2912 Providence USA

Gabbert, Prof. U.
Otto von Guericke University of Magdeburg, Fakultät für Machinebau, Institut für
Mechanik, Universitätsplatz 2,
D-39106 Magdeburg Germany

Germain, Prof. P.
Academie des Sciences,
23 Quai de Conti, 75006 Paris France

Gjevik, Prof. B.N.
University of Oslo, Dept. of Mathematics
Box 1053 Blindern, N 0316 Oslo Norway

Gladwell, Prof. G.M.L.
University of Waterloo, Dept. of Civil Engineering
N2L 3G1 Waterloo Canada

Gudmundson, Prof. P.
Royal Institute of Technology (KTH),
Dept. of Solid Mechanics, S 10044 Stockholm Sweden

Gupta, Prof. N.K.
Indian Institute of Technology, Dept. of Applied Mechanics
IIT Delhi, Hauz Khas, 110 016 New Delhi India

Gutkowski, Prof. W.
Institute of Fundamental Technological Research, Center of Mechanics and Information
Techn., ul. Swietokrzyska 21,
PL 00-049 Warszawa Poland

Guz, Prof. A.N.

The National Academy of Sciences of Ukraine, Timoshenko Inst. of Mechanics, 3
Nesterov Street, 252680 Kyiv Ukraine

Hansen, Prof. J.

University of Toronto, Institute for Aerospace Studies
4925 Dufferin Street, M3H 5T6 Toronto Canada

Hashin, Prof. Z.

Tel Aviv University, Faculty of Engineering
Ramat Aviv, 69978 Tel Aviv Israel

Hayes, Prof. M.A.

University College - Dublin, Dept. of Mathematical Physics, F-202 Arts Building 4,
Belfield, 4 Dublin Ireland

He, Prof. Y.S.

Shanghai Jiao Tong University, Dept. of Engineering Mechanics, School of Civil
Engineering and Mechanics
1954 Hua Shan Road, 200030 Shanghai China

Herakovich, Prof. C.T.

University of Virginia, Applied Mechanics Program
B122 Thornton Hall, Charlottesville, VA 22903-2442 USA

Hodge, Prof. P. G.

Stanford University, Dept. of Applied Mechanics, School of Engineering, 262 Durand
Bldg., CA 94305-4 Stanford USA

Hodnett, Prof. P.F.

University of Limerick, Dept. of Mathematics and Statistics
Limerick Ireland

Holt, Prof. R.G.

Boston University, Dept. of Aerospace and Mechanical Engineering, 110 Cummington
St., MA 02215 Boston USA

Homsy, Prof. G.M.

Stanford University, School of Engineering, Dept. of Chemical Engineering, Stanford,
CA 94305-5025 USA

Huerre, Prof. P.

CNRS-Ecole Polytechnique, Laboratoire d'Hydrodynamique
F-9 1128, Palaiseau Cedex France

Hult, Prof. J.

Chalmers University of Technology, Dept. of History of Technology & Industry, S-41296 Gothenburg Sweden

Hutchinson, Prof. J. W.

Harvard University, Division of Applied Mechanics
315 Pierce Hall 29 Oxford Street, 29 Oxford Street
Cambridge, MA 02138 USA

Huyghe, Dr. J.M.

Eindhoven University of Technology, Dept. of Mechanical Engineering, PO Box 513,
5600 MB Eindhoven Netherlands

Idelsohn, Dr. S. R.

Instituto de Desarrollo Tecnológico para la Industria Química (INTEC), Guemes 3450,
3000 Santa Fe Argentina

Imai, Prof. I.

University of Tokyo, Professor Emeritus
1-11-5 Suido, Bunkyo-ku, 112-0005 Tokyo Japan

Inoue, Prof. T.

Kyoto University, Dept. of Energy Conversion Science, Faculty of Energy Science,
Yoshida-Honmachi, Sakyo-ku
606-8501 Kyoto Japan

Iooss, Prof. G.

Institut Universitaire de France, INLN UMR CNRS-UNSA No 6618, 1361 route des
Lucioles, F-06560 Valbonne France

Ishlinsky, Prof. A. Yu.

Russian Academy of Sciences, Institute for problems in Mechanics, pr. Vernadskogo
101-1, 117526 Moscow Russia

Ismail, Prof. M. K.

Academy of Scientific Research and Technology, Egyptian Committee of Theoretical
and Applied Mechanics
5 Dessouk Street, Heliopolis, Cairo Egypt

Ito, Prof. M.

Takushoku University, Faculty of Engineering
5-45-2 Sendagi Bunkyo-ku, 113 Tokyo Japan

Iyengar, Prof. R.N.
Indian Institute of Science, Dept. of Civil Engineering
560012 Bangalore India

Jaiani, Prof. G.
Tbilisi State University, I. Vekua Institute of Applied Mathematics, 2 University Str.,
380043 Tbilisi Georgia

Jiménez, Prof. J.
Universidad Politecnica de Madrid, Motopropulsion y Termofluidodinamica E.T.S.I.
Aeronauticos
Plaza Cardenal Cisneros 3, E 28040 Madrid Spain

Jones, Prof. N.
University of Liverpool, Dept. of Mechanical Engineering, Mechanical Engineering
Building, Brownlow Street
Liverpool L69 3GH UK

Joseph, Prof. D.D.
University of Minnesota, Dept. of Aerospace Engineering and Mechanics, 107 Akerman
Hall, 110 Union Street S.E.
MN 55455 Minneapolis USA

Kaliszky, Prof. S.
Budapest University of Technology and Economics, Dept. of Struct. Mechanics,
Muegyetem rpt. 3, 1521 Budapest Hungary

Kambe, Prof. T.
Science Council of Japan, National Committee for Theoretical and Applied Mechanics
(Chairman), Roppongi 7-22-34, Minato-ku, 106-8555 Tokyo Japan

Kant, Prof. T.
Indian Institute of Technology Bombay, Dept. of Civil Engineering, Powai, 400 076
Mumbai India

Karihaloo, Prof. B.L.
Cardiff University, Division of Civil Engineering, School of Engineering, Queen's
Buildings, P.O.Box 925,
CF24 0YF Cardiff UK

Kerr, Prof. R.M.
National Centre for Atmospheric Research,
Boulder, CO 80307-3000 USA

Keunings, Prof. R.
Université Catholique de Louvain, CESAME, Division of Applied Mechanics, Av.
George Lemaitre 4,
B-1348 Louvain-La-Neuve Belgium

King, Prof. A.C.
University of Birmingham, School of Mathematics and Statistics, Edgbaston, B15 2TT
Birmingham UK

Kitagawa, Prof. H.
Osaka University, Graduate School of Engineering, Dept. of Adaptive Machine Systems,
2-1 Yamada-oka, Suita,
Osaka, 565-0871 Japan

Kitagawa, Dr. M.
Ishikawajima-Harima Heavy Industries Co., Ltd., Technical Dev. Division, 3-2-16
Toyosu Kotoku, 135-8733 Tokyo Japan

Kiya, Prof. M.
Kushiro National College of Technology,
Kushiro 084-0916 Japan

Klimov, Prof. D.M.
Institute for Problems in Mechanics, Prospect Vernadskogo 101, bldg 1., 117526
Moscow Russia

Kluwick, Prof. A.
Technische Universität Wien, Institut für Stromungslehre und Wärmeübertragung,
Resselgasse 3/1/3, A-1040 Wien Austria

Kobayashi, Prof. T.
University of Tokyo, Institute of Industrial Science, Dept. of Mechanical Engineering
and Naval Architecture, 4-6-1-, Komaba, Meguro, 153-8505 Tokyo Japan

Kortum, Prof. W.
Institute of Aeroelasticity DLR-Oberpfaffenhofen,
P.O. Box 1116, D-82230 Wessling Germany

Kounadis, Prof. A.N.
National Technical University of Athens, Dept. of Civil Engineering, Patission Street 42,
GR-10682 Athens Greece

Kowalewski, Prof. T.A.
Institute of Fundamental Technological Research, Center of Mechanics and Information
Techn., Polish Academy of Sciences, ul. Swietokrzyska 21, PL 00-049 Warszawa Poland

Kozlov, Prof. V.V.

Moscow Lomonosov State University, Sub-faculty of Mathematical Statistics, Dept. of Mathematics and Mechanics
119899 Vorob'evy Gory, Moscow Russia

Krause, Prof. E.

Aerodynamisches Institut, RWTH Aachen
Wullnerstrasse 5-7, D-52062 Aachen Germany

Kreuzer, Prof. E.J.

Technische Universität Hamburg-Harburg, Arbeitsbereich Mechanik und Meerestechnik,
Eissendorfer Str. 42,
D-21071 Hamburg Germany

Ku, Prof. Y.H.

3504 Harris Drive, Edmond, OK 73013 USA

Kuhn, Prof. G.C.

Universität Erlangen-Nürnberg, Lehrstuhl für Technische Mechanik, Egerlandstr.5, D
91058 Erlangen Germany

Kuyumdzhev, Prof. H.

University of Ruse, Dept. of Theoretical and Applied Mechanics, 8, Studentska Street,
7017 Ruse Bulgaria

Kyriakides, Prof. S.

University of Texas at Austin, Center for Mechanics of Solids, Structures and Materials,
WRW 110 C0600
TX 78712-1 Austin USA

Lagarde, Prof. A.

Universite de Poitiers, Faculte des Sciences, Laboratoire de Mecanique des Solides, Bd3,
Teleport 2, BP 179,
F-86960 Futuroscope Cedex France

Lavendelis, Prof. E.

Riga Technical University, Institute of Mechanics
1 Kalku Street, LV-1658 Riga Latvia

Leal, Prof. L.G.

University of California at Santa Barbara, Dept. of Chemical Engineering, Santa
Barbara, CA 93106-5080 USA

Leblond, Prof. J.B.

University Pierre et Marie Curie, Laboratoire de Modelisation en Mecanique,
8, rue du Capitaine Scott, F 75015 Paris France, Metropolitan

Lespinard, Prof. G.M.

Institut National Polytechnique de Grenoble,
46 Avenue Felix- Viallet, F 38031 Grenoble Cedex France

Leweke, Dr. T.

CNRS / Universites Aix- Marseille I & II, IRPHE 49, rue F. Joliot-Curie - B.P. 146,
F-13384 Marseille Cedex 13 France

Lin, Prof. Y.K.

Florida Atlantic University, Center for Applied Stochastics Research, 777 Glades Rd.,
Boca Raton, FL 33431 USA

Lugner, Prof. P.

Technische Universität Wien, Institut für Mechanik E 325
Wiedner Hauptstr. 8-10, A 1040 Wien Austria

Lund, Prof. F.

Universidad de Chile, Departamento de Fisica, Facultad de Ciencias Fisicas y
Matematicas, Casilla 487-3, Santiago Chile

Lundberg, Prof. B.

Uppsala University, Materials Science, Angstrom Laboratory
Box 534, S-751 21 Uppsala Sweden

Madsen, Prof. P. A.

Technical University of Denmark, Dept. of Mathematical Modelling, Section for
Numerical Analysis, Computational Hydrodyn. Group, Building 321,
DK-2800 Lyngby Denmark

Maier, Prof. G.

Politecnico di Milano, Dipartimento di Ingegneria Strutturale
Piazza Leonardo da Vinci, 32, I-20133 Milano Italy

Mang, Prof. H.A.

Vienna University of Technology, Institute for Strength of Materials, Karlsplatz 13,
A-1040 Vienna Austria

Marn, Prof. J.

University of Maribor, Faculty of Mechanical Engineering
Smetonova 17, 2000 Maribor Slovenia

Martins, Prof. J. A. C.

Technical University of Lisbon, Instituto Superior Tecnico, Departamento de Engenharia Civil e Arquitectura
Avenida Rovisco Pais, 1049-001 Lisboa Portugal

McPhedran, Prof. R.C.

University of Sydney, School of Physics
Sydney Australia

Meier, Prof. G.E.A.

Deutsches Zentrum für Luft - und Raumfahrt (DLR), Institut für Experimentelle Strömungsmechanik, Bunsenstrasse 10
D 37073 Göttingen Germany

Miehe, Prof. C.

University of Stuttgart, Institute of Applied Mechanics (Chair I), Pfaffenwaldring 7,
70550 Stuttgart Germany

Mikhailov, Prof. G.K.

Lomonosovsky Pr. 14, Apt 97, 117296 Moscow Russia

Miloh, Prof. T.

Tel Aviv University, Dept. of Fluid Mechanics and Heat Transfer. Faculty of Engineering, Tel Aviv 69978 Israel

Moffatt, Prof. H.K.

University of Cambridge, Dept. of Applied Mathematics and Theoretical Physics, Silver Street, CB3 9EW Cambridge UK

Monkewitz, Prof. P. A.

Swiss Federal Institute of Technology Lausanne (EPFL), Lab. of Fluid Mechanics (LMF), Dept. of Mechanical Engineering
CH-1015 Lausanne Switzerland

Moratilla, Mr. A.

Instituto Nacional de Tecnica Aeroespacial, Carretera de Ajalvir km. 4,00, Torrejon de Ardoz, 28850 Madrid Spain

Moreau, Prof. R.

Institut National Polytechnique de Grenoble, ENSHM de Grenoble, B.P. 95, F-38402 St Martin d'Heres, Cedex France

Morozov, Prof. N.F.

St. Petersburg State University, Math&Mech Faculty, Elasticity Dept., Vereiskaya Str. 22-24, apt. 15, St. Petersburg 198013 Russia

Morro, Prof. A.
University, DIBE, Via Opera Pia 11a, 16145 Genova Italy

Movchan, Prof. A.B
University of Liverpool, Dept. of Mathematical Sciences
M & O Building, L69 3BX Liverpool UK

Munjal, Prof. M. L.
Indian Institute of Science, Dept. of Mechanical Engineering, Faculty for Research in
Technical Acoustics (FRITA), 560 012 Bangalore India

Murakami, Prof. S. M.
Aichi University of Technology, Dept. of Mechanical Systems Engineering,
Nishihazama-cho, 443-0047 Gamagori-city, Aichi-prefectur Japan

Määttänen, Prof. M.
Helsinki University of Technology, Dept. of Mechanical Engineering, P.O.Box 4100,
FIN-02015 HUT Finland

Nakra, Prof. B.C.
Indian Institute of Technology, Dept. of Mechanical Engineering, Hauz Khas, 110 016
New Delhi India

Namachchivaya, Prof. S
University of Illinois at Urbana- Champaign, Dept. of Aeronautical and Astronautical
Eng., 306 Talbot Laboratory, MC-236, 104 South Wright Street, IL 61801 Urbana USA

Narasimha, Prof. R.
Jawaharlal Nehru Centre for Advanced Scientific Research, Nat. Institute of Advanced
Studies, 560 012 Bangalore India

Narayanan, Prof.
Indian Institute of Science, Dept. of Applied Mechanics
Madras India

Niordson, Prof. F.
Technical University of Denmark, Dept. of Solid Mechanics
Building 404, DK-2800 Lyngby Denmark

O'Donoghue, Prof. P.E.
National University of Ireland Galway, Dept. of Civil Engineering, Galway Ireland

Oden, Prof. J. T.
University of Texas at Austin, Dept. of Aerospace Eng. and Eng. Mechanics, 2400
Taylor Hall, TX 78712 Austin USA

Ohashi, Prof. H.
Kogakuin University, 1-24-2 Nishi-Shinjuku, Shinjuku-ku
163-8677 Tokyo Japan

Ohno, Prof. N.
Nagoya University, Dept. of Mechanical Engineering
Furo-cho, Chikasu-Ku, 464-8603 Nagoya Japan

Okrouhlik, Prof. M.
Academy of Sciences of the Czech Republic, Mechanics and Solids Dept., Inst. of
Thermomechanics, Dolejskova 5,
182 00 Prague 8 Czech Republic

Olhoff, Prof. N.
University of Aalborg, Institute of Mechanical Engineering
Pontoppidanstraede 101, Dk-9220 Aalborg Denmark

Oñate, Prof. E.
International Center for Numerical Methods in Engineering (CIMNE), Edificio C-1,
Campus Norte UPC, Gran Capitan s/n
08034 Barcelona Spain

Orkisz, Prof. J.
Cracow University of Technology, Warsaw St 24,
31155 Cracow Poland

Paavola, Prof. J.
Helsinki University of Technology, Dept. of Civil and Environmental Eng., P.O. Box
2100, FIN-02015 HUT Finland

Pearson, Prof. J. R. A.
25 Chaucer Road, CB2 2EB Cambridge UK

Pedley, Prof. T.J.
University of Cambridge, Dept. of Applied Mathematics and Theoretical Physics, Silver
Street, CB3 9EW Cambridge UK

Pellegrino, Dr. S.
University of Cambridge, Dept. of Engineering
Trumpington Street, CB2 1PZ Cambridge UK

Peregrine, Prof. D.H.
University of Bristol, School of Mathematics
University Walk, BS8 1TW Bristol UK

Pfeiffer, Prof. F.

Technical University of Munich, Institute for Applied Mechanics
Boltzmannstr.15, D85748 Garching Germany

Phan-Thien, Prof. N.

University of Sydney, Dept. of Mechanical and Mechatronic Engineering, 2006 New South Wales Australia

Phillips, Prof. J.W.

University of Illinois at Urbana-Champaign, Dept. of Theoretical and Applied Mechanics, 216 Talbot Laboratory, 104 South Wright Street, 61801-2983 Urbana, IL USA

Pilipenko, Prof. V.V.

National Academy of Sciences of Ukraine and National Space Agency Of Ukraine, Institute of Technical Mechanics
15, Leshko-Popel Street, 49005 Dniepropetrovsk Ukraine

Podio-Guidugli, Prof. P.

Universita' di Roma "Tor Vergata", Dipt. di Ingegneria Civile, Via di Tor Vergata 110, I 110-0013 Rome Italy

Pollard, Prof. A.

Queen's University at Kingston, Dept. of Mechanical Engineering, Computational and Experimental Fluid Dynamics Lab., Kingston, ON K7L 3N6 Canada

Ramkissoon, Prof. H.

University of the West Indies, Dept. of Mathematics and Computer Science, St. Augustine, Trinidad West Indies

Rega, Prof. G.

Universita di Roma La Sapienza, Dipartimento di Ingegneria Strutturale e Geotecnica, Via Antonio Gramsci 53,
I 00197 Roma Italy

Rimrott, Prof. F.P.J.

University of Toronto, Dept. of Mechanical and Industrial Engineering, Toronto, Ontario M5S 3G8 Canada

Ritchie, Prof. R.O.

University of California at Berkeley, Dept. of Materials Science and Engineering, 577 Evans Hall, MC 1760
CA 94720-1 Berkeley USA

Rodin, Prof. G. J.

The University of Texas at Austin, Dept. of Aerospace Engineering and Eng. Mechanics,
Austin, TX 78712 USA

Rosato, Prof. A.D.

New Jersey Institute of Technology, Mechanical Engineering Department, University
Heights, NJ 07102 Newark USA

Rozvany, Prof. G.

Budapest University of Technology and Economics, Faculty of Civil Engineering, Dept.
of Structural Mechanics
Muegyetem rkp. 3, Kmf 35, H-1521 Budapest Hungary

Rushchitsky, Prof. J.J.

S.P. Timoshenko Institute of Mechanics, Secretary-General of the National Committee
of Ukraine on Theoretical and Applied Mechanics, Nesterov str.3, Kyiv 03680 Ukraine

Ruzic, Prof. D.D.

University of Belgrade, Faculty of Mechanical Engineering, Applied Mechanics and
Theory of Structures
27 marta no. 80, 11120 Belgrade Yugoslavia

Saje, Prof. M.

University of Ljubljana, Faculty of Civil and Geodetic Engineering (FGG), Jamova 2,
SLO-61000 Ljubljana Slovenia

Salençon, Prof. J.

Ecole Polytechnique, Laboratoire des Mécanique des Solides
F-91128 Palaiseau Cedex France

Saric, Prof. W.S.

Arizona State University, Mechanical and Aerospace Engineering, P.O. Box 876106,
85287-6106 Tempe, AZ USA

Savage, Prof. S.B.

McGill University, Dept. of Civil Engineering and Applied Mechanics,
817 Sherbrooke Street West,
H3A 2K6 Montreal, Quebec Canada

Sayir, Prof. M.B.

Swiss Federal Institute of Technology (ETH), Dept. of Mechanical and Process
Engineering, ETH-Zentrum,
8092 Zurich Switzerland

Schiehlen, Prof. W.
University of Stuttgart, Institute B of Mechanics
Pfaffenwaldring 9, 70550 Stuttgart Germany

Schrefler, Prof. B.A.
University of Padova, Faculty of Engineering, Dipartimento di Costruzioni e Trasporti,
Via F. Marzolo 9, 35131 Padova Italy

Schröder, Prof. W.
Rheinisch-Westfälische Technische Hochschule (RWTH) Aachen,
Aerodynamisches Institut, Wuellnerstrasse 5-7, D-52062 Aachen
Germany

Shaqfeh, Prof. E.S.G.
Stanford University, Dept. of Chemical Eng., 207 Stauffer III, 381 North-South Mall,
Stanford, CA 94305-5025 USA

Sharp, Prof. R. S.
Cranfield University, School of Mechanical Engineering
Wharley End, MK43 0AL Bedford UK

Shen, Prof. H.H.
Clarkson University, Dept. of Civil and Environmental Engineering, Potsdam, NY
13699-5710 USA

Shibutani, Prof. Y.
Osaka University, Graduate School of Engineering, Dept. of Mechanical Eng. and
Systems, 2-1 Yamada-Oka, Suita,
Osaka, 565-0871 Japan

Smits, Prof. A.J.
Princeton University, Dept. of Mechanical and Aerospace Engineering, NJ 08544
Princeton USA

Sobczyk, Prof. K.
Institute of Fundamental Technological Research (IPPT), Center of Mech.,
Swietokrzyska 21, 00-049 Warsaw Poland

Sobieczky, Prof. H.
DLR German Aerospace Center, Bunsenstrasse 10,
D 37073 Göttingen Germany

Sotiropoulos, Prof. D.A.
Southern Polytechnic State University, 1100 S. Marietta Parkway, GA 30060 2 Marietta
USA

Stein, Prof. E.

University of Hannover, Institut für Baumechanik und Numerische Mechanik (IBNM),
Appelstraße 9A,
D-30167 Hannover Germany

Storåkers, Prof. B.

Royal Institute of Technology (KTH), Dept. of Solid Mechanics, Osquars Backe 1, S-
10044 Stockholm Sweden

Stähle, Prof. P.

Malmö University, Division of Material Mechanics
SE 205 06 Malmö Sweden

Suhubi, Prof. E.S.

Istanbul Technical University, Dept. of Engineering Sciences
Maslak 80626, Istanbul Turkey

Sun, Prof. Q.P.

Hong Kong University of Science and Technology, Dept. of Mech. Eng., Clear Water
Bay, Kowloon Hong Kong China

Suquet, Prof. P.

CNRS, Laboratoire de Mécanique et d'Acoustique,
31 Chemin Joseph Aiguier, 13402 Marseille Cedex 20 France

Szefer, Prof. G.

Krakow University of Technology, Institute of Structural Mechanics, ul. Warszawska 24,
31-155 Krakow Poland

Tamuzs, Prof. V.

University of Latvia, Institute of Polymer Mechanics
Aizkraukles iela 23, Lv-1006 Riga Latvia

Tanner, Prof. R.I.

University of Sydney, Faculty of Engineering, School of Aerospace, Mechanical and
Mechatronic Engineering
Building J07, NSW 2600 Sydney Australia

Tatsumi, Prof. T.

Kyoto University (Emeritus Professor), 26-6 Chikuzendai, Momoyama, Fushimi, 612-
8032 Kyoto Japan

Thess, Prof. A.

Ilmenau University of Technology, Dept. of Mechanical Engineering, P.O. Box 100565,
D 98684 Ilmenau Germany

Toit, Prof. C. G. de K.

Potchefstroom University for CHE, School for Mechanical and Materials Eng., Unit for Computational Mechanics, Private Bag X6001, 2520 Potchefstroom South Africa

Tong, Prof. P.

Hong Kong University of Science and Technology, Dept. of Mech. Eng., Clear Water Bay, Kowloon, Hong Kong China

Toropov, Prof. V.

University of Bradford, School of Engineering
BD7 1DP Bradford, West Yorkshire UK

Triantafyllidis, Prof. N.

University of Michigan, Dept. of Aerospace Engineering
MI 48109 Ann Arbor USA

Tvergaard, Prof. V.

Technical University of Denmark, Dept. of Mechanical Eng., Solid Mechanics, Nils Koppels Alle, Building 404,
DK-2800 Lyngby Denmark

Van Dao, Prof. N.

Vietnam National University, Hanoi, 144, Xuan Thuy Street, Cau Giay, Hanoi Viet Nam

Vatta, Prof. F.

Politecnico di Torino, Dipartimento di Meccanica
Corso Duca degli Abruzzi 24, 10129 Torino Italy

Viswanath, Dr. P.

National Aerospace Laboratory, Experimental Aerodynamics Division, P.O. Box No. 1779, 560 017 Bangalore India

Vollmann, Dr. J.

Swiss Federal Institute of Technology, Institute of Mechanical Systems, ETH Zurich, CLA H 21.1, CH 8092 Zurich Switzerland

Wagner, Prof. S. N. W.

University of Stuttgart, Dept. of Aerospace Engineering
Pfaffenwaldring 21, D-70550 Stuttgart Germany

Watanabe, Prof. K.

Yamagata University, School of Engineering, Dept. of Mechanical Eng., Yonezawa, 992-8510 Yamagata Japan

Watanabe, Prof. E.

Kyoto University, Dept. of Civil Engineering, Yoshida-Honmachi, Sakyo-ku, 606-8501
Kyoto Japan

Weaver, Prof. D.

McMaster University, Dept. of Mechanical Engineering
1280 Main Street West, Ont. L8S 4 Hamilton Canada

Weir, Dr. G.

Industrial Research Limited, P.O. Box 31-310,
Lower Hutt New Zealand

Wijngaarden, Prof. L.

University of Twente, Dept. of Mechanical Engineering
Gebouw WB, P.O. Box 217, 7500 AE Enschede Netherlands

Williamson, Prof. C.H.K.

Cornell University, Dept. of Mechanical and Aerospace Engineering, 252 Upson Hall,
NY 14853-7 Ithaca USA

Willis, Prof. J.

University of Cambridge, Dept. of Applied Mathematics and Theoretical Physics, Silver
Street, Cambridge CB3 9EW UK

Wilmanski, Prof. K.

Weierstrass Institute for Applied Analysis and Stochastics,
Mohrenstr. 39, 10117 Berlin Germany

Yagawa, Prof. G.

University of Tokyo, School of Engineering, Dept. of Quantum Engineering and
Systems, 7-3-1 Hongo, Bunkyo-ku,
113- 8656 Tokyo Japan

Yang, Prof. W.

Tsinghua University, Dept. of Engineering Mechanics
100084 Beijing China

Yeh, Prof. C.-S.

National Taiwan University, Institute of Applied Mechanics
No. 1 Sec. 4 Roosevelt Road, Taipei Taiwan

Yoo, Prof. J.Y.

Seoul National University, School of Mechanical and Aerospace Engineering, San 56-1,
Shilim-dong, Kwanak-Ku,
Seoul 151-742 Korea

Zaleski, Prof. S.

Universite Pierre et Madame Curie, LMM, CNRS - UMR 7607, Boite 162, 8, rue du Cap. Scott, 75015 Paris France

Zaoui, Prof. A.

CNRS, Ecole Polytechnique, Laboratoire de Mécanique des Solides, Ecole Polytechnique, 91128 Palaiseau cedex France

Zheng, Prof. Z.

Chinese Academy of Sciences, Institute of Mechanics
15 Zhong Guan Cun Road, 100080 Beijing China

Zhong, Prof.

Dalian University of Technology, Research Institute of Engineering Mechanics, 116024 Dalian China

Zhuang, Prof. F.-G.

China Aerospace Corporation, Science and Technology Council, P.O. BOX 849, 100830 Beijing China

Ziegler, Prof. F.

Technische Universitaet Wien, Institut für Allgemeine Mechanik, Wiedner Hauptstrasse 8-10/201, A-1040 Wien Austria

<http://www.iutam.net>

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