



NEWSLETTER

President's Address

From the Office of the Secretary-General

IUTAM Symposia 2011, 2012 and 2013

IUTAM Summer Schools 2012

IUTAM Co-Sponsored Events 2011 and 2012

International Congress, XXIII ICTAM, Beijing, August 2012

IUTAM Home Page:

**<http://www.iutam.net>
or: <http://www.iutam.org>**

International Union of Theoretical and Applied Mechanics

N-2011-1

June 2011

President's Address

It's been a quiet few months in IUTAM, apart from the work of the Congress Committee Secretary who, in collaboration with our Chinese hosts, is assiduously preparing for the 23rd ICTAM in Beijing next year. The Secretary-General and Treasurer have been in contact with representatives of the mechanics communities in two countries, Bulgaria and Korea, with whom IUTAM has in recent years had very limited communication. I am happy to say that it looks as though successful resolutions of the difficulties have been negotiated, and agreements with institutions in both countries are expected to be ratified by the Bureau at its meeting in Cambridge (England) in August this year.

In response to a request from ICSU, IUTAM put forward a nomination for a member to serve on the Steering Committee of the 10-year ICSU initiative on Earth System Research for Global Sustainability, a topic in which IUTAM has widespread expertise and interest. Unfortunately our nominee was not appointed to the Steering Committee (now called the 'Transition Team'). However, IUTAM is one of the International Unions that are contributing to the IUGG (International Union of Geodesy and Geophysics) "Grand Challenge in Natural Hazards Research and Risk Analysis"; indeed, more or less as I write, Professor Paul Linden is on his way to the IUGG Congress in Melbourne, Australia, where he will represent IUTAM in a symposium with the above title. In addition, there has been welcome contact with the President of the International Mathematical Union (IMU), Professor Ingrid Daubechies in France, and we have agreed that there should be increased interaction between our two Unions, especially in our responses to initiatives from ICSU. Thus we have jointly put forward a candidate for the Executive Committee of ICSU, for which elections will be held during the ICSU General Assembly in Rome in September 2011. We have also agreed to support IMU in its global initiative to develop mathematical activities in relation to studies of our planet and our society. It would be good if IUTAM could develop yet more collaboration with other International Unions as well.

In recent months we have been emphatically reminded of the powerful impact that mechanical events can have on the Earth and the communities

that live upon it. We have seen the earthquake and tsunami in north-eastern Japan, floods in the Missouri river basin in the USA, and new clouds of destructive ash emitted by volcanoes in both the northern and the southern hemispheres, not to mention the ‘interesting’ fluid mechanics revealed by the blow-out of the Deepwater Horizon oil well in the Gulf of Mexico. Prediction of such events, and protection from their consequences, seem still to be very inadequate. I believe that mechanical scientists and engineers will need to be deeply involved, for a long time, not only in developing greater scientific understanding of the problems and technological solutions to them, but also in the political process through which governments will, we hope, be persuaded to protect their citizens.

Cambridge, 26 June 2011

Tim Pedley
President of IUTAM
Cambridge

From the Office of the Secretary General

IUTAM Report 2010:

The IUTAM Report 2010 will be printed in July 2011 and sent by post in September 2011.

It contains in particular the minutes of the General Assembly held in Paris, France, in July 2010.

Summer 2011 meetings of the Bureau and the XCCC:

The summer 2011 meetings of the Bureau and the XCCC will be held in Cambridge, UK, on 13 and 14 August.

Agenda items to be discussed at the Bureau meeting are:

- Matters concerning Adhering and Associate Organizations
- Matters concerning Affiliated Organizations
- Matters concerning IUTAM Working Parties
- Matters concerning ICSU
- Reports by the Treasurer and the Secretary-General
- Publication of Proceedings
- Proposal for evaluating Symposia applications every year
- Follow-up actions of 2010 General Assembly meeting

Call for Symposia and Summer Schools 2013-2014:

The call for the next wave of IUTAM Symposia and IUTAM Summer Schools is now open online. The deadline for submission is 1st April 2012.

Frédéric Dias
Secretary-General of IUTAM
Cachan & Dublin

IUTAM Symposia 2011

11-1 = GA.08-05 IUTAM Symposium on Mechanics of Liquid and Solid Foams

Place: Austin, TX, USA
Date: May 8 – May 13, 2011
Chairman: **Prof. S. Kyriakides**
University of Texas at Austin
Center for Mechanics of Solids, Structures and Materials
210 East 24th Street
WRW 110, TX 78712 Austin USA
Email: skk@mail.utexas.edu

Co-Chairman: **Dr. A.M. Kraynik**
Sandia National Laboratories, Dept. 1514-MS 0836
NM 87185-0836 Albuquerque, USA
Email: amkrayn@sandia.gov

IUTAM Representative on Scientific Committee: Prof. N.A. Fleck

11-2 = GA.08-09 IUTAM Symposium on Linking Scales in Computations: From Microstructure to Macro-scale Properties

Place: Shalimar, FL, USA
Date: May 17 – May 19, 2011
Chairman: **Prof. O. Cazacu**
University of Florida
REEF, 1350 N. Poquito Road
Shalimar FL USA
Email: cazacu@reef.ufl.edu

IUTAM Representative on Scientific Committee: Prof. J.B. Leblond

**11-3 = GA.08-11 IUTAM Symposium on Human Body Dynamics:
From Multibody Systems to Biomechanics**

Place: Waterloo, Canada
Date: June 05 – June 08, 2011
Chairman: **Prof. J.J. McPhee**
University of Waterloo
Department of Systems Design Engineering
N2L 3G1 Waterloo, Canada
Email: mcphee@real.waterloo.ca

Co-Chairman: **Dr J. Kovecses**
McGill University, Canada
Email: jozsef.kovecses@staff.mcgill.ca

IUTAM Representative on Scientific Committee: Prof. F.L. Chernousko

**11-4 = GA.08-10 IUTAM Symposium on Full-field Measurements
and Identification in Solid Mechanics**

Place: Cachan, France
Date: July 04 – July 08, 2011
Chairman: **Prof. F. Hild**
LMT-Cachan, 61 Avenue du President Wilson, F-94235
Cachan cedex, France
Email: hild@lmt.ens-cachan.fr

Co-Chairman: **Prof. D. Espinosa**
Northwestern University
Department of Mechanical Engineering
60208-3111 Evanston IL USA
Email: espinosa@northwestern.edu

IUTAM Representative on Scientific Committee: Prof. G. Maier

11-5 = GA.08-13 IUTAM Symposium on Impact Biomechanics in Sport

Place: Dublin, Ireland
Date: July 07 – July 09, 2011
Chairman: **Prof. M.D. Gilchrist**
University College Dublin
Department of Mechanical Engineering
Belfield, Dublin 4
Ireland
Email: michael.gilchrist@ucd.ie

IUTAM Representative on Scientific Committee: Prof. D.H. van Campen

11-6 = GA.08-06 IUTAM Symposium on Computer Models in Biomechanics: From Nano to Macro

Place: Stanford, CA, USA
Date: August 29 – September 02, 2011
Chairman: **Dr. E. Kuhl**
Stanford University
Dept. of Mechanical Eng & Bioengineering
496 Lomita Mall, Durand 217
CA-94305-4 Stanford USA
Email: ekuhl@stanford.edu
Co-Chairman: **Prof. G.A. Holzapfel**
Graz University of Technology
Institute of Biomechanics
Kronesgasse 5-I, 8010 Graz, Austria
Email: holzapfel@tugraz.at

IUTAM Representative on Scientific Committee: Prof. J. Engelbrecht

**11-7= GA.08-04 IUTAM Symposium on 50 Years of Chaos:
Applied and Theoretical**

Place: Kyoto, Japan
Date: November 28 – December 02, 2011
Chairman: **Prof. T. Hikihara**
Kyoto University
Department of Electrical Engineering
Katsura, Nishikyo, 615-8510 Kyoto Japan
Email: hikihara@kuee.kyoto-u.ac.jp

Co-Chairman: **Prof. T. Kambe**
Former professor (University of Tokyo), Higashi-yama
2-11-3
Meguro-ku, 153-0043 Tokyo, Japan
Email: kambe@ruby.dti.ne.jp

IUTAM Representative on Scientific Committee: Prof. D.H. van Campen

11-8 = GA.08-02 IUTAM Symposium on Bluff Body Flows

Place: Kanpur, India
Date: December 12 – December 16, 2011
Chairman: **Prof. S. Mittal**
Indian Institute of Technology
Department of Aerospace Engineering
UP 208016 IIT Kanpur, India
Email: smittal@iitk.ac.in

Co-Chairman: **Prof. G. Biswas**
Indian Institute of Technology, Department of
Mechanical Engineering, UP 208016 IIT Kanpur
India
Email: gtm@iitk.ac.in

IUTAM Representative on Scientific Committee: Prof. T. Kambe

IUTAM Symposia 2012

12-1= GA.10-07 IUTAM Symposium on Mobile particulate systems : kinematics, rheology and complex phenomena

Place: Bangalore, India
Date: January 23 – January 27, 2012
Chairman: **Prof. P. Nott**
Indian Institute of Science
Department of Chemical Engineering
560012 Bangalore
India
Email: prnott@chemeng.iisc.ernet.in

IUTAM Representative on Scientific Committee: Prof. G. Leal

12-2 = GA.10-12 IUTAM Symposium on Advanced materials modelling for structures

Place: Paris, France
Date: April 23 – April 27, 2012
Chairman: **Prof. S. Kruch**
ONERA
29 avenue Division Leclerc
92320 Chatillon, France
Email: serge.kruch@onera.fr

IUTAM Representative on Scientific Committee: Prof. V. Tvergaard

12-3= GA.10-09 IUTAM Symposium on From mechanical to biological systems - an integrated approach

Place: Izhevsk, Russia
Date: June 05 – June 09, 2012
Chairman: **Prof. V. Kozlov**
Udmurt State University
Izhevsk
119991 Moscow
Russia
Email : kozlov@ras.ru
<http://iutam2012.rcd.ru/>

IUTAM Representative on Scientific Committee: Prof. F. Chernousko

12-4= GA.10-08 IUTAM Symposium on Waves in fluids: Effects of nonlinearity, rotation, stratification and dissipation

Place: Moscow, Russia
Date: June 18 – June 22, 2012
Chairman: **Pr. Y.D. Chashechkin**
Institution of the Russian Academy of Sciences A.Yu. Ishlinskii
Institute for Problems in Mechanics of the RAS
119526 Moscow
Russia
Email: chakin@ipmnet.ru

IUTAM Representative on Scientific Committee: Prof. F. Chernousko

12-5= GA.10-16 IUTAM Symposium on Multiscale problems in stochastic mechanics

Place: Karlsruhe, Germany
Date: June 25 – June 29, 2012
Chairman: **Prof. C. Proppe**
Karlsruhe Institute of Technology
76131 Karlsruhe
Germany
Email: proppe@kit.edu

IUTAM Representative on Scientific Committee: Prof. E. Kreuzer

12-6= GA.10-14 IUTAM Symposium on Fracture phenomena in nature and technology

Place: Brescia, Italy
Date: July 01 – July 05, 2012
Chairman: **Prof. D. Bigoni**
Department of Mechanical and Structural Engineering
University of Trento
Via Mesiano 77
38050 Trento, Italy
Email : bigoni@ing.unitn.it

IUTAM Representative on Scientific Committee: Prof. B. Freund

12-7 = GA.10-03 IUTAM Symposium on Understanding common aspects of extreme events in fluids

Place: Dublin, Ireland
Date: July 02 – July 06, 2012
Chairman: **Dr. M.D. Bustamante**
University College Dublin
School of Mathematical Sciences
Belfield, Dublin 4
Ireland
Email: miguel.bustamante@ucd.ie

IUTAM Representative on Scientific Committee: Prof. F.Dias

12-78= GA.10-02 IUTAM Symposium on Topological fluid dynamics II

Place: Cambridge, UK
Date: July 23 – July 27, 2012
Chairman: **Prof. K. Moffatt**
University of Cambridge
Dept. of Applied Mathematics and Theoretical Physics.
CB3 0WA Cambridge - UK
Email: hkm2@damtp.cam.ac.uk

Co-Chairman: **Dr. K. Bajer**
Institute of Geophysics, Warsaw University
02-093 Warszawa, Poland
Email: Konrad.Bajer@fuw.edu.pl

Co-Chairman: **Prof. Y. Kimura**
School of Mathematics
Nagoya University
Nagoya, Japan
Email: kimura@math.nagoya-u.ac.jp

IUTAM Representative on Scientific Committee: Prof. T. Pedley

12-9= GA.10-15 IUTAM Symposium on Hysteresis and pattern evolution in non-equilibrium solid-solid phase transitions

Place: Hong Kong, China
Date: August 15 – August 18, 2012
Chairman: **Prof. Q.P. Sun**
Hong Kong University of Science and Technology
Kowloon
Hong Kong
China
Email: meqpsun@ust.hk

IUTAM Representative on Scientific Committee: Prof. S. Kyriakides

12-10= GA.10-06 IUTAM Symposium on Particle methods in fluid mechanics

Place: Kgs. Lyngby, Denmark
Date: October 15 – October 17, 2012
Chairman: **Prof. J.H. Walther**
Department of Mechanical Engineering
Technical University of Denmark
2800 Kgs. Lyngby
Denmark
Email: jhw@mek.dtu.dk

IUTAM Representative on Scientific Committee: Prof. H. Aref

12-11= GA.10-11 IUTAM Symposium on Advances of optical methods in experimental mechanics

Place: Hsinchu, China-Tapei
Date: November 03 – November 06, 2012
Chairman: **Prof. W.-C. Wang**
National Tsing Hua University
Department of Power Mechanical Engineering
30013 Hsinchu
Taiwan
Email: wawang@pme.nthu.edu.tw

IUTAM Representative on Scientific Committee: Prof. B. Freund

IUTAM Symposia 2013

13-1= GA.10-13 IUTAM Symposium on Materials and interfaces under high strain rate and large deformation

Place: Metz, France
Date: June 17 – June 21, 2013
Chairman: **Prof. S. Mercier**
Université Paul Verlaine Metz
Ile du Saulcy
57045 Metz, France
Email: sebastien.mercier@univ-metz.fr
Co-Chairman: **Prof. J. F. Molinari**
Ecole Polytechnique Fédérale de Lausanne
CH 1015, Lausanne, Switzerland.
Email: jean-francois.molinari@epfl.ch

IUTAM Representative on Scientific Committee: Prof. N. Gupta

13-2 = GA.10-01 IUTAM Symposium on The dynamics of extreme events influenced by climate change

Place: Lanzhou, China
Date: **2013, no exact dates available yet**
Chairman: **Prof. X. Zheng**
Department of Mechanics
Lanzhou University, China
Email : xizheng@lzu.edu.cn
Co-Chairman: **Prof. P. Linden**
Department of Applied Mathematics and Theoretical Physics
University of Cambridge, UK
Email: p.f.linden@damtp.cam.ac.uk

IUTAM Representative on Scientific Committee: Prof. K. Moffatt

**13-3 = GA.10-04 IUTAM Symposium on Vortex dynamics:
formation, structure and function**

Place: Kyushu, Japan
Date: **2013, no exact dates available yet**
Chairman: **Prof. Y. Fukumoto**
Kyushu University
Faculty of Mathematics
744 Motooka, Nishi-ku
819-0395 Fukuoka Japan
Email: yasuhide@math.kyushu-u.ac.jp

IUTAM Representative on Scientific Committee: Prof. H. Aref

**13-4 = GA.10-05 IUTAM Symposium on Nonlinear interfacial
wave phenomena from the micro to the macro-
scale**

Place: Limassol, Cyprus
Date: **2013, no exact dates available yet**
Chairman: **Prof. D. Papageorgiou**
Imperial College of London
Department of Mathematics
Huxley Building, 180 Queen's gate
SW7 2AZ London UK
Email: d.papageorgiou@imperial.ac.uk

IUTAM Representative on Scientific Committee: Prof. F. Dias

13-5= GA.10-10 IUTAM Symposium on Recent developments in impact testing of materials and structures

Place: Xi'an, China
Date: **2013, no exact dates available yet**
Chairman: **Prof. Y. Li**
School of Aeronautics
Northwestern Polytechnical University
710072 Xi'an
China
Email: liyulong@nwpu.edu.cn

Co-Chairman: **Prof. Han Zhao**
Ecole Normale Supérieure de Cachan
France
Email: zhao@lmt.ens-cachan.fr

IUTAM Representative on Scientific Committee: Prof. B. Freund

13-6= GA.10-17 IUTAM Symposium on Multiscale modelling and uncertainty quantification of materials and structures

Place: Athens, Greece
Date: **2013, no exact dates available yet**
Chairman: **Prof. M. Papadrakakis**
NTUA
Zografou Campus
15780 Athens
Greece
Email: mpapadra@central.ntua.gr

IUTAM Representative on Scientific Committee: Prof. O. Allix

IUTAM Summer Schools

2012 IUTAM Summer School on Biomechanics of Tissue and Tissue-Cell Interaction

Place: Purdue, USA
Event dates: June 05 – June 08, 2012
Coordinators: **Prof. T. Siegmund**
Purdue University
School of Mechanical Engineering
585 Purdue Mall
47907 West Lafayette USA
Email: siegmund@purdue.edu

2012 IUTAM-CISM Summer School on Mechanics of Nanocrystalline Materials

Place: Udine, Italy
Event dates: **2012, no exact dates available yet**
Coordinator: **Prof. M. Cherkaoui**
School of Mechanical Eng.
Georgia Institute of Technology
Atlanta, GA 30332-0405
USA
Email: mcherkaoui@me.gatech.edu

Co-Coordinator: **Prof. D. L. McDowell**
School of Mechanical Eng.
Georgia Institute of Technology
Atlanta, GA 30332-0405
USA
Email: david.mcdowell@me.gatech.edu

IUTAM Co-Sponsored Events

2011 **Conference “Mechanics and Physics of Porous Solids : A tribute to late Pr. Olivier Coussy”**

Place: Ecole des Ponts ParisTech
 Champs-sur-Marne
 France

Date: April 18 – April 20, 2011

Coordinator : **Prof. P. Dangla**
 UR Navier - CNRS
 2, allée Kepler
 77420 Champs sur Marne
 France
Email : dangla@lcpc.fr
Webpage : <http://navier.enpc.fr/events/mpps2011>

2011 **International Conference on Simulation Technology**

Place: University of Stuttgart
 Germany

Date: June 14 – June 17, 2011

Coordinator : **Prof. W. Ehlers**
 University of Stuttgart
 Institute of Mechanics
 70569 Stuttgart
 Germany
Email : ehlers@mechbau.uni-stuttgart.de

2011 **International Colloquium on Fundamental Problems of
Turbulence : 50 Years after the Turbulence Colloquium
Marseille 1961**

Place: Centre International de Rencontres Mathématiques
Marseille, France

Date: September 26 – September 30, 2011

Coordinator : **Prof. K. Schneider**
University of Provence
Centre de Mathématiques et d'Informatique
13453 Marseille
France

Email : kschneid@cmi.univ-mrs.fr

2012 **Second Joint International Conference on Multibody
System Dynamics**

Place: University of Stuttgart
Germany

Date: May 29 – June 01, 2012

Coordinator : **Prof. P. Eberhard**
University of Stuttgart
Institute of Engineering and Computational Mechanics
70569 Stuttgart
Germany

Email: eberhard@itm.uni-stuttgart.de

International Congress, XXIII ICTAM, Beijing 2012

August 19-24, 2012

The International Congresses on Theoretical and Applied Mechanics (ICTAM), organized every four years by IUTAM, bring together scientists from all over the world for the purpose of exchanging information about recent developments in the field. Participation is unrestricted.

For further information see ICTAM home page,
<http://www.ictam2012.org/>

or please contact:

Professor Hassan Aref
Secretary of the IUTAM Congress Committee
Virginia Tech
Email: haref@vt.edu

Opening and Closing Lecturers

Opening Lecturer: Professor Shiyi Chen (China)

Closing Lecturer: Professor Ben Freund (USA)

Mini Symposia

MS 01. Mechanical challenges in energy

Co-chairs:

Professor Ken Reifsnider (USA)

Professor Jens Nørkær Sørensen (Denmark)

Professor Dongxiao Zhang (China)

MS 02. Mechanics of natural disasters

Co-chairs:

Professor Bernhard Schrefler (Italy)

Professor Pavel Tkalich (Singapore)

MS 03. Fluid-structure interactions in biological systems

Co-chairs:

Professor Gerhard Holzapfel (Austria)

Professor Eric Lauga (USA)

MS 04. Mechanics of transport in microfluidic devices

Co-chairs:

Professor Matthew Begley (USA)

Professor Henrik Bruus (Denmark)

MS 05 Dynamics and control of morphing structures

Co-chairs:

Professor Ephraim Garcia (USA)

Professor Haiyan Hu (China)

MS 06 Effects of small size scales in materials modeling

Co-chairs:

Professor Huajian Gao (USA)

Professor Marc Geers (Netherlands)

Pre-Nominated Sessions**Fluid Mechanics****FM1** Biological fluid dynamics**FM2** Boundary layers**FM3** Combustion and flames**FM4** Compressible flow**FM5** Convection**FM6** Drops, bubbles and multiphase flows**FM7** Flow instability and transition**FM8** Flow in thin films**Solid Mechanics****SM1** Biomechanics and biomaterials**SM2** Contact and friction mechanics**SM3** Damage mechanics**SM4** Elasticity**SM5** Fracture mechanics**SM6** Geophysics and geomechanics**SM7** Impact mechanics and wave propagation**SM8** Mechanics of multi-component materials and composites

FM9	Geophysical and environmental fluid dynamics	SM9	Mechanics of phase transformations
FM10	Low Reynolds number flows	SM10	Mechatronics
FM11	Magneto hydrodynamics	SM11	Multibody and vehicle dynamics
FM12	Non-Newtonian and complex fluids	SM12	Nanostructures and MEMS
FM13	Stirring and mixing	SM13	Plasticity, viscoplasticity and creep
FM14	Turbulence	SM14	Stability of structures
FM15	Vortex dynamics	SM15	Structural optimization (Co-sponsored by ISSMO)
FM16	Waves in fluids	SM16	Vibrations and control of structures
FM17	General fluid mechanics	SM17	General solid mechanics

Topics involving both fluid mechanics and solid mechanics

FS01	Acoustics
FS02	Computational methods in mechanics
FS03	Experimental methods in mechanics
FS04	Chaos and pattern formation
FS05	Electro- and magnetomechanical systems
FS06	Fluid structure interactions
FS07	Smart materials
FS08	Granular materials and flows
FS09	Mechanics of materials processing
FS10	Porous media
FS11	Foams and cellular materials
FS12	Education in mechanics

Notice on IUTAM Symposia

The IUTAM Symposia are reserved to invited participants. Those wishing to participate in an IUTAM Symposium are therefore advised to contact the Chairman of the Scientific Committee in due time in advance of the meeting.

IUTAM is a member of ICSU
<http://www.icsu.org>

Notice on availability of IUTAM Newsletter

The IUTAM Newsletter is available (free of charge) to whom it concern upon request from the IUTAM Secretary-General.

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