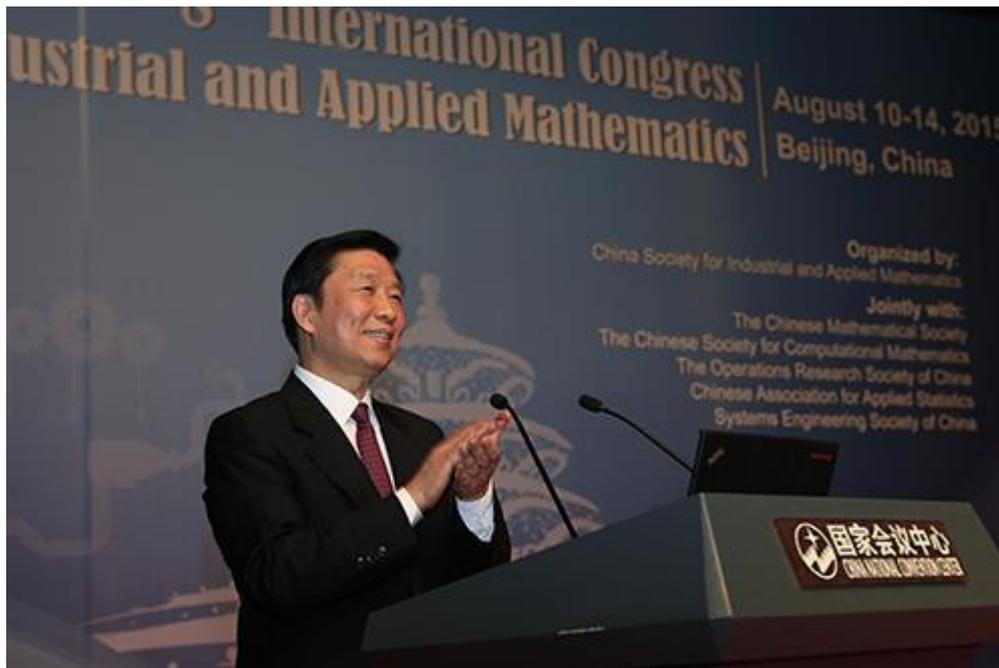


## ICIAM Today – August 10, 2015

### Monday Recap

#### Opening Ceremony and Laudations for Prize Winners



More than 3100 industrial and applied mathematicians from over 70 countries and regions attended the Eighth International Congress on Industrial and Applied Mathematics. On behalf of the Chinese government, China Vice-President Li Yuanchao expressed warmly welcome to scientists, industrial experts, and delegates from all over the world, and congratulated the ICIAM Prize recipients. He emphasized that under the banner of peace, development, cooperation and win-win strategy, China will actively support and take part in the international communication and cooperation, and encourage Chinese scientists to engage in widespread academic exchange and cooperation with scientists from all over the world, to reach new milestones of science together, so as to make greater contributions to the development of science, technology and human civilization.

In the opening ceremony, ICIAM President Barbara Keyfitz and Congress director Guo Lei also gave speeches and presented their welcome messages to all the attendees at ICIAM 2015.

Some young artists performed *Nanyin music* which is one of the oldest Chinese music genres, it is among the World Intangible Cultural Heritage. They also presented wonderful Chinese traditional music including *Blooming Flowers and Full Moon* and *Rising Higher Step by Step*. A group of twenty-one deaf and mute dancers brought us to a fantastic classic Chinese dance performance *Thousand-hand of the Goddess of Mercy*.

**Highlight** of the opening ceremony: Vice-President Li presented the awards to the prize winners.



## About the prizes and winners

### Collatz Prize

The Collatz Prize was established to provide international recognition to individual scientists for outstanding work on industrial and applied mathematics.



[Annalisa Buffa](#)

The 2015 **ICIAM** Collatz Prize is awarded to [Annalisa Buffa](#) in recognition of her spectacular use of deep and sophisticated mathematical concepts to obtain outstanding contributions to the development of computer simulations in science and industry.

Buffa is Director of the Institute for Applied Mathematics and Information Technologies (Pavia-Genoa-Milan section).

In a relatively short amount of time, Buffa has been able to bring fundamental contributions to a number of different aspects of scientific computing, with an incredible range both in the type of applications and in the type of mathematical instruments. The trademark of her work is the use of highly sophisticated mathematical techniques to produce fundamental breakthroughs that are applied to computer simulations in industry.

## Lagrange Prize

The Lagrange Prize was established to provide international recognition to individual mathematicians who have made an exceptional contribution to applied mathematics throughout their careers.



[Andrew J. Majda](#)

[Andrew J. Majda](#) of the Courant Institute at New York University receives the 2015 **ICIAM** Lagrange Prize in recognition of his ground-breaking, original, fundamental and pioneering contributions to applied mathematics and, in particular, to wave front propagation and combustion, scattering theory, fluid dynamics and atmosphere climate science. His research, which has merged asymptotic and numerical methods, physical reasoning and modeling, along with rigorous mathematical analysis, has had an enormous and long lasting impact on modern applied mathematics, science and engineering (geophysics, seismology, weather prediction, combustion, and more) and remains the state of the art **today**.

Majda is the Morse Professor of Arts and Sciences at the Courant Institute of New York University.

## Maxwell Prize

The Maxwell Prize was established to provide international recognition to a mathematician who has demonstrated originality in applied mathematics.



[Jean-Michel Coron](#)

The 2015 **ICIAM** Maxwell Prize is awarded to **Jean-Michel Coron** of the Université Pierre et Marie Curie for his fundamental and original contributions to the study of variational methods for partial differential equations and the nonlinear control of nonlinear partial differential equations.

Jean-Michel Coron is a Professor in the Laboratoire Jacques-Louis Lions at the Université Pierre et Marie Curie.

Coron has had a deep and profound impact in the study of variational methods for nonlinear partial differential equations. His original work on constant mean curvature surfaces, periodic solutions for nonlinear wave equations, nonlinear elliptic equations with critical Sobolev exponents and harmonic maps for nematic liquid crystals has had a major impact in these fields.

### **Pioneer Prize**

The Pioneer Prize was established for pioneering work introducing applied mathematical methods and scientific computing techniques to an industrial problem area or a new scientific field of applications.



**Björn Engquist**

The 2015 **ICIAM** Pioneer Prize is awarded to **Björn Engquist** of the University of Texas at Austin, USA for fundamental contributions in the field of applied mathematics, numerical analysis and scientific computing which have had long-lasting impact in the field as well as successful applications in science, engineering and industry.

Engquist is Professor of Mathematics and Computational and Applied Mathematics at the University of Texas at Austin.

He has made fundamental contributions in the field of applied mathematics, numerical analysis and scientific computing which have had long lasting impact in the field as well as successful applications in science, engineering and industry. Some of his most important pioneering contributions include seminal work on absorbing boundary conditions (ABC), first proposed by Engquist and Majda, for numerical computation of wave propagation.

### **Su Buchin Prize**

The Su Buchin Prize was established to provide international recognition of an outstanding contribution by an individual in the application of mathematics to emerging economies and human development, in particular at the economic and cultural level in developing countries.



Li Tatsien

The 2015 **ICIAM** Su Buchin Prize is awarded to [Li Tatsien](#), Fudan University, Shanghai in recognition of his outstanding contributions to applied mathematics and to the dissemination of mathematical sciences in developing countries. Li Ta-tsien is a professor in the School of Mathematical Sciences at Fudan University.

Not only is Li Ta-tsien an eminent mathematician. During the past decades, he has been extremely influential in the development of the pure and applied mathematical community in developing countries. More specifically, a very farsighted initiative was taken in 1998 by Jacques-Louis Lions and Li Ta-tsien, who together co-founded ISFMA, the Institut Sino-Français de Mathématiques Appliquées, or Chinese-French Institute of Applied Mathematics.

## What to look for on Tuesday, Aug 11

### Prize and Invited Lectures

8:30-9:30

- Title: Seismic full waveform inversion and the Monge - Ampère equation  
Room: **Ballroom A**  
**Björn Engquist**, University of Texas at Austin, USA  
Chair: Takashi Kako
- Title: From phenomena of synchronization to exact synchronization and approximate synchronization for hyperbolic systems  
Room: **Ballroom B**  
**Tatsien Li**, Fudan University, China  
Chair: Gilbert Strang
- Title: An Applied Math Perspective on Climate Science, Turbulence, and Other Complex Systems  
Room: **Ballroom C**  
**Andrew J. Majda**, Courant Institute at New York University, USA  
Chair: Felix Otto

10:00-11:00

- Title: Covering the Uncertainty of Distributions by Nonlinear Expectation, Nonlinear PDE and BSDE  
Room: **Ballroom A**  
**Shige Peng**, Shandong University, China  
Chair: Zhiming Ma
- Title: A PDE Approach to Numerical Fractional Diffusion  
Room: **Ballroom B**  
**Ricardo Nochetto**, University of Maryland, USA  
Chair: Yunqing Huang
- Title: Grid and Grid Control Optimization in Europe  
Room: **Ballroom C**  
**Ludger D. Sax**, Grid Optimization Europe– System Planning Gas & Water, Germany  
Chair: Thomas A. Grandine

11:10-12:10

- Title: Modeling Rare Transition Events  
Room: **Ballroom A**  
**Eric Vanden-Eijnden**, New York University, USA  
Chair: Weinan E
- Title: Explorations in the biofluidynamics of locomotion  
Room: **Ballroom B**  
**Lisa Fauci**, Tulane University, USA  
Chair: Jennifer Chayes
- Title: Randomized Algorithms in Linear Algebra  
Room: **Ballroom C**  
**Ravi Kannan**, Microsoft Research, India  
Chair: Song Jiang

## Special Lecture

19:00-20:00 Peter Henrici Prize Lecture

Title: Mathematical aspects of collective dynamics: consensus, the emergence of leaders and social hydrodynamics

Room: **Ballroom C**

**Eitan Tadmor**, University of Maryland, USA

Chair: L. Pamela Cook

**Notice:**

Possible changes and the newest update of the Conference Program can be found on the official website: <http://www.iciam2015.cn/Reschedule.html>