

ICIAM PRIZE Ceremony



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Moderator: Alistair Fitt



ICIAM Prize Ceremony

Prize committee

Rolf Jeltsch (Chair, President ICIAM)

Ingrid Daubechies

Tom Mitsui (ICIAM Collatz Prize)

Alfio Quarteroni (ICIAM Lagrange Prize)

Olivier Pironneau (ICIAM Maxwell Prize)

Björn Engquist (ICIAM Pioneer Prize)

Gilbert Strang (ICIAM Su Buchin Prize)



Rolf Jeltsch



ICIAM Prize Ceremony

Subcommittees

Collatz Prize Tom Mitsui (Chair)

Adimurthi, Douglas N. Arnold, Jean-Pierre Bourguignon, Wolfgang Hackbusch, Anders Lindquist

Lagrange Prize Alfio Quarteroni (Chair)

Alfredo Bermudez, Ron DeVore, Yvon Maday, Stefan Müller, Zhong-ci Shi

Maxwell Prize Olivier Pironneau (Chair)

Jonathan Borwein, Ingrid Daubechies, Heinz Engl, Leslie Greengard, Tim Pedley, Graeme Wake

Pioneer Prize Björn Engquist (Chair)

Nicola Bellomo, Jon Chapman, Hermano Frid, Ruppert Klein, Shige Peng, Linda Petzold

Su Buchin Prize Gilbert Strang (Chair)

John Ball, Mohamed H.A. Hassan, Lin Qun, Ragnar Winter

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Rolf Jeltsch

ICIAM 2011



ICIAM Prize Ceremony

Winners have been announced on 20 Sept. 2010.

Monetary value of the Lagrange Prize is US\$ 3000.
For the other prizes it is US\$ 1000 each.

The contributing societies are:

CSIAM, GAMM, IMA, SEMA, SIAM, SIMAI, SMAI

SBMAC sponsored the certificates.



Rolf Jeltsch



ICIAM Collatz Prize

Established in 1999 to provide international recognition to individual scientists under 42 years of age for outstanding work on industrial and applied mathematics.

Recipients:

1999 Stefan Müller

2003 Weinan E

2007 Felix Otto

The Collatz Prize was created on the initiative of GAMM.
It is presently funded by GAMM.



Speaker: Tom Mitsui



ICIAM Collatz Prize 2011

Emmanuel Candès, Stanford & Pasadena, USA



- for his pioneering work on the linear complexity method
- for the fast numerical solution of wave propagation problems as well as on his spectacular development in compressive sensing

ICIAM Collatz Prize 2011

Emmanuel Candès, Stanford & Pasadena, USA



- His results are not only mathematically rigorous but also exploring many applications in a vast area of scientific computation
- for inventing ridgelets, curvelets, chirplets and anisotropic extensions of wavelets

The International Council for Industrial and Applied Mathematics, ICIAM, awards the

ICIAM COLLATZ PRIZE

to professor

Emmanuel J. Candès

Stanford University of and California Institute of Technology

in recognition of his outstanding contributions to numerical solution of wave propagation problems and compressive sensing as well as anisotropic extensions of wavelets.

The ICIAM Collatz Prize is funded by GAMM,
Gesellschaft für Angewandte Mathematik und Mechanik

Vancouver, 18 July 2011



Professor Rolf Jeltsch
President ICIAM



ICIAM Lagrange Prize

Established in 1999 to provide international recognition to individual mathematicians who have made an exceptional contribution to applied mathematics throughout their careers.

Recipients:

1999 Jacques-Louis Lions

2003 Enrico Magenes

2007 Joseph Keller

The Lagrange Prize was created on the initiative of SMAI. It is presently funded by SMAI, SEMA and SIMAI.



Speaker: Alfio Quarteroni



ICIAM Lagrange Prize 2011

Alexandre J. Chorin, Berkeley, USA



- His development of key ideas in computational fluid dynamics by combining mathematical intuition, physical insight, and attention to algorithmic implementation
- His invention of Projection Method stands at the base of the most efficient incompressible flow solvers

ICIAM Lagrange Prize 2011

Alexandre J. Chorin, Berkeley, USA



- His profound contribution to application of modern physics to turbulence modeling and kinetic theory of gases
- His investigation of complex physical problems by developing effective and accurate models that allow to address a great variety of applied fields

The International Council for Industrial and Applied Mathematics, ICIAM, awards the

ICIAM LAGRANGE PRIZE

to professor

Alexandre J. Chorin

University of California Berkeley and Lawrence Berkeley National Laboratory

in recognition of his fundamental and original contributions to applied mathematics, fluid mechanics, statistical mechanics, and turbulence modelling. His methods for the numerical solution of Navier-Stokes equations stand at the basis of the most popular codes in computational fluid mechanics.

The ICIAM Lagrange Prize is funded by SEMA, SIMAI and SMAI

Sociedad Española de Matemática Aplicada,

Società Italiana di Matematica Applicata e Industriale,

Société de Mathématiques Appliquées et Industrielles

Vancouver, 18 July 2011



Professor Rolf Jeltsch
President ICIAM



ICIAM Maxwell Prize

Established in 1999 to provide international recognition to a mathematician who has demonstrated originality in applied mathematics.

Recipients:

1999 Grigory Isaakovic Barenblatt

2003 Martin D. Kruskal

2007 Peter Deuflhard

The Maxwell Prize was created on the initiative of the IMA (with the support of the J.C. Maxwell Society). It is presently funded by IMA.



Speaker: Olivier Pironneau



ICIAM Maxwell Prize 2011

Vladimir Rokhlin, New Haven, USA



- for his work on the fast multipole methods which have revolutionarized many fields by reducing computational costs dramatically, e.g. Laplace's, Helmholtz', Maxwell's eqs, molecular dynamics.
- for his work on the nonequispaced fast Fourier transform which generalizes the classical FFT to the case of non-integer frequencies and non-equispaced nodes.

ICIAM Maxwell Prize 2011

Vladimir Rokhlin, New Haven, USA



- In inverse scattering, Rokhlin and Y. Chen derived a new approach to computation, based on a stable trace
- for introducing randomized schemes for the construction of low-rank approximations to matrices which promises to supersede SVD.

The International Council for Industrial and Applied Mathematics, ICIAM, awards the

ICIAM MAXWELL PRIZE

to professor


Vladimir Rokhlin

Yale University

in recognition of his work on fast multipole methods with which he has revolutionized fields like numerical electromagnetism for radar and molecular dynamics for chemistry.

The ICIAM Maxwell Prize is funded by IMA
The Institute of Mathematics and its Application

Vancouver, 18 July 2011



Professor Rolf Jeltsch
President ICIAM



ICIAM Pioneer Prize

Established in 1999 to provide international recognition for introducing applied mathematical methods and scientific computing techniques to an industrial problem area or a new scientific field of applications.

Recipients:

1999 Ronald R. Coifman, Helmut Neunzert

2003 Stanley Osher

2007 Ingrid Daubechies, Heinz Engl

The ICIAM Pioneer Prize was created on the initiative of SIAM. It is presently funded by SIAM.



Speaker: Björn Engquist



ICIAM Pioneer Prize 2011

James Albert Sethian, Berkeley, USA



- for his pioneering work in computational mathematics with applications to science and engineering
- for his fundamental contributions to the development of level set and fast marching methods as novel and robust techniques in computational geometry

ICIAM Pioneer Prize 2011

James Albert Sethian, Berkeley, USA



- for his applications of the level set and fast marching methods to many scientific and industrial processes, often involving moving interfaces, for example, multiphase fluid dynamics, semiconductor manufacturing, robotics and image processing

The International Council for Industrial and Applied Mathematics, ICIAM, awards the

ICIAM PIONEER PRIZE

to professor

James Albert Sethian

University of California Berkeley and Lawrence Berkeley National Laboratory

in recognition of his fundamental methods and algorithms which had a large impact in applications such as in imaging and shape recovery in medicine, geophysics and tomography and drop dynamics in inkjets.

The ICIAM Pioneer Prize is funded by SIAM,
Society for Industrial and Applied Mathematics

Vancouver, 18 July 2011



Professor Rolf Jeltsch
President ICIAM



ICIAM Su Buchin Prize

Established in 2003 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.

Recipients:

2007 Gilbert Strang

The Su Buchin Prize was created on the initiative of CSIAM, and is awarded for the first time in 2007. It is presently funded by CSIAM.



Speaker: Gilbert Strang



ICIAM Su Buchin Prize 2011

Edward Lungu, Gaborone, Botswana



- for mathematical modelling of problems and solutions essential for Africa
- for his outstanding example of teaching and research and organizing applied mathematics in Africa

ICIAM Su Buchin Prize 2011

Edward Lungu, Gaborone, Botswana



- for models of the spread of HIV and malaria; and models of hydrology and ecology
- for his "giant force" of leadership in African applied mathematics: SAMSA and AMMSI

The International Council for Industrial and Applied Mathematics, ICIAM, awards the

ICIAM SU BUCHIN PRIZE

to professor

Edward Lungu

University of Botswana

*in recognition of his mathematical modelling of problems related
Africa and his fundamental contribution to developing teaching, research
and organizational structures for applied mathematics in Southern Africa.*

The ICIAM Su Buchin Prize funded by CSIAM,
China Society for Industrial and Applied Mathematics

Vancouver, 18 July 2011



Professor Rolf Jeltsch
President ICIAM



**Congratulations to all
winners!**



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winners!**

**This ends the ICIAM PRIZE
Ceremony**

