At-A-Glance

SIAM Conference on **NONLINEAR WAVES** and **COHERENT STRUCTURES**

JUNE 11-14, 2018

DoubleTree by Hilton Hotel
Anaheim – Orange County
Orange, California, USA

siam | Society for Industrial and Applied Mathematics

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2018 SIAM Conference on Nonlinear Waves and Coherent Structures At-A-Glance

Sunday, June 10

5:00 PM - 7:00 PM
Registration
Malibu - Main Floor

Monday, June 11

7:30 AM - 3:30 PM
Registration
Malibu - Main Floor

8:30 AM - 8:45 AM
Opening Remarks
Laguna/Newport - Main Floor

8:45 AM - 9:30 AM
IP1 Amphiphilic Morphology: Lipids, Proteins, and Entropy
Keith Promislow, Michigan State University, USA
Laguna/Newport - Main Floor

9:30 AM - 10:00 AM
Coffee Break
Huntington/Manhattan - Main Floor

10:00 AM - 12:00 PM
Concurrent Sessions
MS1 Defects in Structured Systems: Modeling, Analysis, and Simulation - Part I of II
Laguna/Newport - Main Floor
MS2 Minisymposium in Honor of Rudy L. Horne
Hermosa - Main Floor
MS3 Challenges in Mathematical Modeling, Analysis and Computation of Quantum Systems - Part I of II
Sunset - Main Floor
MS4 Nonlinear Waves and Singularities in Hydrodynamics, Physics and Biology - Part I of III
Redondo - Main Floor
MS5 Stability of Coherent Structures: A Geometric Approach - Part I of III
Lassen - 2nd Floor
MS6 Recent Advances in Nonlinear Water Wave Modeling with Applications - Part I of II
Sequoia - 2nd Floor
CP1 Global Solutions for PDEs
Redwood - 2nd Floor

12:00 PM - 1:45 PM
Lunch Break
Attendees on their own

1:45 PM - 2:30 PM
IP2 Pilot-wave Hydrodynamics: From Chaotic Dynamics to Quantum-like Statistics
John W. Bush, Massachusetts Institute of Technology, USA
Laguna/Newport - Main Floor

2:30 PM - 3:00 PM
Coffee Break
Huntington/Manhattan - Main Floor

3:00 PM - 5:00 PM
Concurrent Sessions
MS7 Defects in Structured Systems: Modeling, Analysis, and Simulation - Part II of II
Laguna/Newport - Main Floor
MS8 Wave-Ice Interactions: Nonlinearity, Paradigms, and Modelling Approaches - Part I of III
Hermosa - Main Floor
MS9 Challenges in Mathematical Modeling, Analysis and Computation of Quantum Systems - Part II of II
Sunset - Main Floor
MS10 Nonlinear Waves and Singularities in Hydrodynamics, Physics and Biology - Part II of III
Redondo - Main Floor
MS11 Stability of Coherent Structures: A Geometric Approach - Part II of III
*Lassen - 2nd Floo*r
MS12 Recent Advances in Nonlinear Water Wave Modeling with Applications - Part II of II
Sequoia - 2nd Floor
***CP2** Modeling and Numerical Simulation of Wave Propagation
Redwood - 2nd Floor

5:00 PM - 5:15 PM
Intermission

5:15 PM - 5:30 PM
Martin D. Kruskal Prize and T. Brooke Benjamin Prize in Nonlinear Waves Award Presentations
Laguna/Newport - Main Floor

5:30 PM - 6:15 PM
SP1 Martin D. Kruskal Prize Lecture - On the Mathematical Theory of Graphene and its Artificial Analogues
Michael I. Weinstein, Columbia University, USA
Laguna/Newport - Main Floor

Tuesday, June 12

8:15 AM - 3:30 PM
Registration
Malibu - Main Floor

8:40 AM - 8:45 AM
Remarks
Laguna/Newport - Main Floor

8:45 AM - 9:30 AM
IP3 Partial Differential Equations as Models for Social Complex Systems
Nancy Rodriguez-Bunn, University of North Carolina at Chapel Hill, USA
Laguna/Newport - Main Floor

9:30 AM - 10:00 AM
Coffee Break
Huntington/Manhattan - Main Floor

10:00 AM - 12:00 PM
Concurrent Sessions
MS13 Wave-Ice Interactions: Nonlinearity, Paradigms, and Modelling Approaches - Part II of III
Laguna/Newport - Main Floor
MS14 Water Waves: Comparisons Between Experiments and Predictions - Part I of II
Hermosa - Main Floor
MS15 Inverse Scattering and Dispersive Hydrodynamics - Part I of II
Sunset - Main Floor
MS16 Nonlinear Waves and Singularities in Hydrodynamics, Physics and Biology - Part III of III
Redondo - Main Floor
MS17 Stability of Coherent Structures: A Geometric Approach - Part III of III
Lassen - 2nd Floor
MS18 Nonlinear Kinetic Waves and Coherent Structures in Vlasov Plasmas - Part I of II
Sequoia - 2nd Floor
CP3 Dynamics and Finite-dimensional Approximations
Redwood - 2nd Floor

12:00 PM - 1:45 PM
Lunch Break
Attendees on their own

1:45 PM - 2:30 PM
IP4 On the Way to the Limit: Oscillatory Stiffness and Low Frequency Dynamics in Climate and Weather Prediction
Beth Wingate, University of Exeter, United Kingdom
Laguna/Newport - Main Floor

Tuesday, June 12

2:30 PM - 3:00 PM
Coffee Break
Huntington/Manhattan - Main Floor

3:00 PM - 5:00 PM
Concurrent Sessions
MS19 Wave-Ice Interactions: Nonlinearity, Paradigms, and Modelling Approaches - Part III of III
Laguna/Newport - Main Floor
MS20 Water Waves: Comparisons Between Experiments and Predictions - Part II of II
Hermosa - Main Floor
MS21 Inverse Scattering and Dispersive Hydrodynamics - Part II of II
Sunset - Main Floor
MS22 Boundary-value Problems for Linear and Nonlinear Integrable Equations - Part I of II
Redondo - Main Floor
MS23 Patterns and Localized Structures - Part I of III
Lassen - 2nd Floor
MS24 Nonlinear Kinetic Waves and Coherent Structures in Vlasov Plasmas - Part II of II
Sequoia - 2nd Floor
***CP4** Existence of Waves and Fronts
Redwood - 2nd Floor

5:00 PM - 5:15 PM
Intermission

5:15 PM - 7:15 PM
PP1 Welcome Reception and Poster Session
Huntington/Manhattan - Main Floor

Wednesday, June 13

8:15 AM - 3:30 PM
Registration
Malibu - Main Floor

8:40 AM - 8:45 AM
Remarks
Laguna/Newport - Main Floor

8:45 AM - 9:30 AM
IP5 Multi-scale Problems of Material Design in Sustainable Energies
Barbara Wagner, Weierstrass Institute, Germany
Laguna/Newport - Main Floor

9:30 AM - 10:00 AM
Coffee Break
Huntington/Manhattan - Main Floor

Wednesday, June 13

10:00 AM - 12:00 PM
Concurrent Sessions
MS25 Large-scale Effects of Local Structures in Complex Systems - Part I of II
Laguna/Newport - Main Floor
MS26 Existence and Stability of Traveling Waves - Part I of III
Hermosa - Main Floor
MS27 Dispersive Hydrodynamics and Applications - Part I of II
Sunset - Main Floor
MS28 Boundary-value Problems for Linear and Nonlinear Integrable Equations - Part II of II
Redondo - Main Floor
MS29 Patterns and Localized Structures - Part II of III
Lassen - 2nd Floor
MS30 Nonlinear Dispersive Waves
Sequoia - 2nd Floor
CP5 Persistence and Stability Waves
Redwood - 2nd Floor

12:00 PM - 1:45 PM
Lunch Break
Attendees on their own

1:45 PM - 2:30 PM
IP6 Nonlinear Geometric Optics and Applications to Stable Singularity Formation
Jared Speck, Massachusetts Institute of Technology, USA
Laguna/Newport - Main Floor

2:30 PM - 3:00 PM
Coffee Break
Huntington/Manhattan - Main Floor

3:00 PM - 5:00 PM
Concurrent Sessions
MT1 Phantom Jams and Nonlinear Waves in Traffic Flow - Theory and Practice
Redondo - Main Floor
MS31 Recent Development in High Performance Nonlinear Optical Systems - Part I of III
Laguna/Newport - Main Floor
MS32 Existence and Stability of Traveling Waves - Part II of III
Hermosa - Main Floor
MS33 Dispersive Hydrodynamics and Applications - Part II of II
Sunset - Main Floor
MS34 Patterns and Localized Structures - Part III of III
Lassen - 2nd Floor

Wednesday, June 13

MS35 Boundaries, Fronts, and Interfaces in Biological and Physical Applications - Part I of III
Redwood - 2nd Floor
MS36 Nonlinear Waves in Nature: Fluid, Plasma and Applied Physics - Part I of III
Sequoia - 2nd Floor

5:00 PM - 5:15 PM
Intermission

5:15 PM - 6:15 PM
PD1 Hot-topic Session: Future Directions for Research
Laguna/Newport - Main Floor

6:15 PM - 6:30 PM
Intermission

6:30 PM - 7:15 PM
SIAG/NWCS Business Meeting
Laguna/Newport - Main Floor
Complimentary beer and wine will be served.

Thursday, June 14

8:15 AM - 3:30 PM
Registration
Malibu - Main Floor

8:40 AM - 8:45 AM
Closing Remarks
Laguna/Newport - Main Floor

8:45 AM - 9:30 AM
IP7 The Rainbow of Spatio-temporal Dynamics in Nonlinear Optics: The Story of Multi-color Light Filaments, Vortices and Other Patterns and the Mathematics Behind It
Alejandro Aceves, Southern Methodist University, USA
Laguna/Newport - Main Floor

9:30 AM - 10:00 AM
Coffee Break
Huntington/Manhattan - Main Floor

10:00 AM - 12:00 PM
Concurrent Sessions
MS37 Recent Development in High Performance Nonlinear Optical Systems - Part II of III
Laguna/Newport - Main Floor
MS38 Existence and Stability of Traveling Waves - Part III of III
Hermosa - Main Floor

Thursday, June 14

MS39 Vegetation Patterns: Modeling, Analysis, and Data - Part I of II
Sunset - Main Floor
MS40 Localized Structures in Nonlinear Evolution and Lattice Equations - Part I of II
Redondo - Main Floor
MS41 Spatial Dynamics: Local and Global Results - Part I of II
Lassen - 2nd Floor
MS42 Boundaries, Fronts, and Interfaces in Biological and Physical Applications - Part II of III
Redwood - 2nd Floor
MS43 Nonlinear Waves in Nature: Fluid, Plasma and Applied Physics - Part II of III
Sequoia - 2nd Floor

12:00 PM - 1:45 PM
Lunch Break
Attendees on their own

1:45 PM - 2:30 PM
IP8 Propagating Waves in Nonlocal Neural Media
G. Bard Ermentrout, University of Pittsburgh, USA
Laguna/Newport - Main Floor

2:30 PM - 3:00 PM
Coffee Break
Huntington/Manhattan - Main Floor

3:00 PM - 5:00 PM
Concurrent Sessions
MS44 Recent Development in High Performance Nonlinear Optical Systems - Part III of III
Laguna/Newport - Main Floor
MS45 Vegetation Patterns: Modeling, Analysis, and Data - Part II of II
Sunset - Main Floor
MS46 Localized Structures in Nonlinear Evolution and Lattice Equations - Part II of II
Redondo - Main Floor
MS47 Spatial Dynamics: Local and Global Results - Part II of II
Lassen - 2nd Floor
MS48 Boundaries, Fronts, and Interfaces in Biological and Physical Applications - Part III of III
Redwood - 2nd Floor
MS49 Nonlinear Waves in Nature: Fluid, Plasma and Applied Physics - Part III of III
Sequoia - 2nd Floor
MS50 Large-scale Effects of Local Structures in Complex Systems - Part II of II
Hermosa - Main Floor

Key to abbreviations and symbols

= Business Meeting
= Coffee Break
= Refreshments Served
CP = Contributed Presentation Session
IP = Invited Plenary Speaker
MS = Minisymposium
MT = Minitutorial
PD = Panel Discussion
PP = Poster Session
SP = Special Lecture
* = Extended Session

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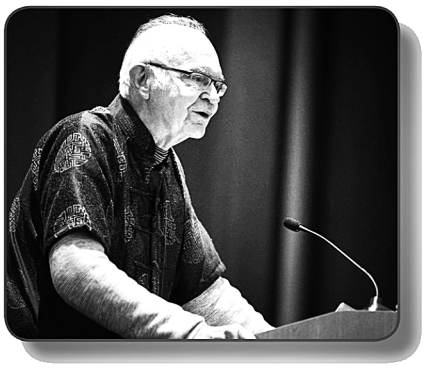

- **algebraic geometry**
- **atmospheric and oceanographic science**
- **computational science**
- **data mining**
- **geophysical science**
- **optimization**
- **uncertainty quantification and more...**

The collection, *Featured Lectures from our Archives*, includes audio and slides from more than 30 conferences since 2008, including talks by invited and prize speakers, select minisymposia, and minitutorials. Presentations from SIAM meetings are being added throughout the year.

In addition you can view short video clips of speaker interviews from sessions at Annual Meetings starting in 2010.

Plans for adding more content are on the horizon. Keep an eye out!

The audio, slide, and video presentations are part of SIAM's outreach activities to increase the public's awareness of mathematics and computational science in the real world, and to bring attention to exciting and valuable work being done in the field. Funding from SIAM, the National Science Foundation, and the Department of Energy was used to partially support this project.

New presentations are posted every few months as the program expands with sessions from additional SIAM meetings. Users can search for presentations by category, speaker name, and/or key words.

www.siam.org/meetings/presents.php

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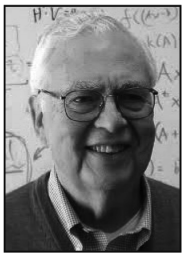
Gene Golub g2s3 2019
SIAM Summer School

June 17-28, 2019
Aussois, France

HIGH PERFORMANCE DATA ANALYTICS



The tenth Gene Golub SIAM Summer School will take place in France, at the Paul Langevin conference center in Aussois, in the French Alps.

The focus of the school will be on large-scale data analytics, which lies at the intersections of data analytics algorithms and high performance computing. Students will be introduced to problems in data analytics arising from both the machine learning and the scientific computing communities. The school will include perspectives from industry, such as Amazon, Google, and IBM, as well as from academic instructors.

Students will be exposed to "end-to-end" multidisciplinary topics, which span several traditionally disparate areas. The series of lectures will develop background on methods and algorithms for data analytics, approximation algorithms to deal with large volumes of data, languages and tools for implementing those algorithms on large scale computers, and data-driven applications from scientific computing and machine learning.

The summer school is being organized by Laura Grigori (Inria and Sorbonne University), Matthew Knepley (University at Buffalo) Olaf Schenk (Università della Svizzera Italiana), and Rich Vuduc (Georgia Institute of Technology).

The intended audience is intermediate graduate students (students with a Master's degree, 2nd-3rd year Ph.D. students without an MS, or equivalent). Applicants selected to participate pay no registration fee. Funding for local accommodations and meal expenses will be available for all participants.

Application deadline: February 1, 2019

As information becomes available on how to apply, it will be posted at:

http://www.siam.org/students/g2s3/

Sponsored by SIAM through an endowment from the estate of Gene Golub.

For more information about prior summer schools and Professor Gene Golub go to ***http://www.siam.org/students/g2s3/***

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Notes

DoubleTree by Hilton Hotel
Hotel Floor Plan