

NWCS16 Program at-a-Glance



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NWCS16 Program-at-a-Glance

A Quick Guide to the 2016 SIAM Conference on Nonlinear Waves and Coherent Structures

**Sunday,
August 7**

5:00 PM - 7:00 PM

Registration
Bromley

**Monday,
August 8**

12:00 PM - 1:45 PM

Lunch Break
Attendees on their own

**Tuesday,
August 9**

8:15 AM - 3:30 PM

Registration
Bromley

Monday, August 8

7:30 AM - 3:30 PM

Registration
Bromley

1:45 PM - 2:30 PM

IP2 Invariant and Quasi-invariant Measures for Hamiltonian PDEs
Tadahiro Oh, University of Edinburgh, United Kingdom
Society Hill Ballroom C & D

8:40 AM - 8:45 AM

Remarks
Society Hill Ballroom C & D

8:30 AM - 8:45 AM

Opening Remarks
Society Hill Ballroom C & D

2:30 PM - 3:00 PM

Coffee Break
Hamilton



8:45 AM - 9:30 AM

IP3 Fluid Dynamics at Zero Reynolds Number: Nonlinearities in a Linear World
Lisa J. Fauci, Tulane University, USA
Society Hill Ballroom C & D

8:45 AM - 9:30 AM

IP1 Pressure Transients and Fluctuations in Natural Gas Networks caused by Gas-Electric Coupling
Michael Chertkov, Los Alamos National Laboratory, USA
Society Hill Ballroom C & D

3:00 PM - 5:00 PM

Concurrent Sessions

MS8 Boundary-value Problems for Linear and Nonlinear Integrable Equations - Part II of III
Society Hill Ballroom C & D

MS9 Periodic Traveling Waves: Existence, Computation, and Stability - Part II of III
Society Hill Ballroom B

MS10 Extreme Events in Nonlinear Wave Phenomena: From Filaments to Rogue Waves Events - Part II of II
Cook

MS11 Stochastic Perturbations to Nearly Integrable Systems - Part II of II
Reynolds

MS12 Quantum Many-Body Dynamics: Analysis and Modeling - Part II of II
Society Hill Ballroom A1

MS13 Lattice Dynamics: Wave Propagation and Continuum Approximation - Part II of III
Society Hill Ballroom A2

MS14 Hamiltonian & Symplectic Methods in the Theory of Nonlinear Waves - Part I of II
Society Hill Ballroom E1

9:30 AM - 10:00 AM

Coffee Break
Hamilton



9:30 AM - 10:00 AM

Coffee Break
Hamilton



10:00 AM - 12:00 PM

Concurrent Sessions

MS15 Boundary-value Problems for Linear and Nonlinear Integrable Equations - Part III of III
Society Hill Ballroom C & D

MS16 Periodic Traveling Waves: Existence, Computation, and Stability - Part III of III
Society Hill Ballroom B

MS17 Modeling for Optical Frequency Combs and Their Applications - Part I of IV
Cook

MS18 Fluid-Structure Interactions and Biological Applications - Part I of II
Reynolds

MS19 Nonlocal Evolution in Mechanics, Electromagnetics, and Transport Phenomena - Part I of IV
Society Hill Ballroom A1

MS20 Lattice Dynamics: Wave Propagation and Continuum Approximation - Part III of III
Society Hill Ballroom A2

MS21 Hamiltonian & Symplectic Methods in the Theory of Nonlinear Waves - Part II of II
Society Hill Ballroom E1

10:00 AM - 12:00 PM

Concurrent Sessions

MS1 Boundary-value Problems for Linear and Nonlinear Integrable Equations - Part I of III
Society Hill Ballroom C & D

MS2 Periodic Traveling Waves: Existence, Computation, and Stability - Part I of III
Society Hill Ballroom B

MS3 Extreme Events in Nonlinear Wave Phenomena: From Filaments to Rogue Waves Events - Part I of II
Cook

MS4 Stochastic Perturbations to Nearly Integrable Systems - Part I of II
Reynolds

MS5 Quantum Many-Body Dynamics: Analysis and Modeling - Part I of II
Society Hill Ballroom A1

MS6 Lattice Dynamics: Wave Propagation and Continuum Approximation - Part I of III
Society Hill Ballroom A2

MS7 Shocks, Interfaces and Coherence in Social, Biological, and Physical Systems
Society Hill Ballroom E1

5:00 PM - 5:15 PM

Intermission

5:15 PM - 5:30 PM

Martin D. Kruskal and T. Brooke Benjamin Prize in Nonlinear Waves Award Presentations
Society Hill Ballroom C & D

5:30 PM - 6:15 PM

SP1 Martin D. Kruskal Prize Lecture - A Dynamist's View of Stability in Multi-Dimensions
Christopher Jones, University of North Carolina at Chapel Hill, USA
Society Hill Ballroom C & D

CP1 Stochastic Aspects and Data Analysis with Applications - Part I
Society Hill Ballroom E2

12:00 PM - 1:45 PM

Lunch Break
Attendees on their own

SIAM Focus Group
(by invitation only)
Flower

1:45 PM - 2:30 PM

IP4 Fascinating Nonlinear Interactions in Metamaterials
Andrea Alù, The University of Texas at Austin, USA
Society Hill Ballroom C & D

Tuesday, August 9

2:30 PM - 3:00 PM

Coffee Break
Hamilton



3:00 PM - 5:00 PM

Concurrent Sessions

MS22 Solitons, Singularities and Wavebreaking in Hydrodynamics, Nonlinear Optics and Plasmas - Part I of IV

Society Hill Ballroom C & D

MS23 Dispersive, Resonant, and Turbulent Dynamics in Nonlinear-wave Models

Society Hill Ballroom B

MS24 Modeling for Optical Frequency Combs and Their Applications - Part II of IV

Cook

MS25 Fluid-Structure Interactions and Biological Applications - Part II of II

Reynolds

MS26 Nonlocal Evolution in Mechanics, Electromagnetics, and Transport Phenomena - Part II of IV

Society Hill Ballroom A1

MS27 Patterns in Non-local and Discretized Systems

Society Hill Ballroom A2

MS28 Analysis and Applications of the Nonlinear Schroedinger Equation

Society Hill Ballroom E1

CP2 Singular Solutions and Bound States: Analytical Methods

Society Hill Ballroom E2

5:00 PM - 5:15 PM

Intermission

5:15 PM - 7:15 PM

PP1 Reception and Poster Session
Hamilton



Wednesday, August 10

8:15 AM - 3:30 PM

Registration
Bromley

8:40 AM - 8:45 AM

Remarks
Society Hill Ballroom C & D

8:45 AM - 9:30 AM

IP5 Nonlinear, Nondispersive Surface Waves
John Hunter, University of California, Davis, USA
Society Hill Ballroom C & D

9:30 AM - 10:00 AM

Coffee Break
Hamilton



Wednesday, August 10

10:00 AM - 12:00 PM

Concurrent Sessions

MS29 Solitons, Singularities and Wavebreaking in Hydrodynamics, Nonlinear Optics and Plasmas - Part II of IV

Society Hill Ballroom C & D

MS30 Advances in Dispersive Nonlinear Equations and Integrable Equations - Part I of III

Society Hill Ballroom B

MS31 Modeling for Optical Frequency Combs and Their Applications - Part III of IV

Cook

MS32 Spectral Stability Analysis of Nonlinear Waves and Computational Proof - Part I of II

Reynolds

MS33 Nonlocal Evolution in Mechanics, Electromagnetics, and Transport Phenomena - Part III of IV

Society Hill Ballroom A1

MS34 Geometric Approaches to Traveling Waves in PDE Models

Society Hill Ballroom A2

MS35 Existence and Stability of Nonlinear Waves and Patterns - Part I of IV

Society Hill Ballroom E1

CP3 Numerical Methods and Computer Assisted Analysis

Society Hill Ballroom E2

12:00 PM - 1:45 PM

Lunch Break

Attendees on their own

1:45 PM

IP6 Shaping Quantum Matter with Light: Exploiting Pattern Formation in Exciton-polariton Condensates

Natalia G. Berloff, University of Cambridge, United Kingdom and Skolkovo Institute of Science and Technology, Russia

Society Hill Ballroom C & D

2:30 PM - 3:00 PM

Coffee Break
Hamilton



3:00 PM - 5:00 PM

Concurrent Sessions

MS36 Solitons, Singularities and Wavebreaking in Hydrodynamics, Nonlinear Optics and Plasmas - Part III of IV

Society Hill Ballroom C & D

MS37 Advances in Dispersive Nonlinear Equations and Integrable Equations - Part II of III

Society Hill Ballroom B

MS38 Modeling for Optical Frequency Combs and Their Applications - Part IV of IV

Cook

Wednesday, August 10

MS39 Spectral Stability Analysis of Nonlinear Waves and Computational Proof - Part II of II
Reynolds

MS40 Nonlocal Evolution in Mechanics, Electromagnetics, and Transport Phenomena - Part IV of IV

Society Hill Ballroom A1

MS41 Novel Challenges in NLS equations: integrability, PT-symmetry and Beyond - Part I of III

Society Hill Ballroom A2

MS42 Existence and Stability of Nonlinear Waves and Patterns - Part II of IV

Society Hill Ballroom E1

***CP4** Applications to Fluids

Society Hill Ballroom E2

5:00 PM - 5:15 PM

Intermission

5:15 PM - 6:30 PM

PD1 Hot Topic Panel Session: Computer-aided Proofs for Existence and Stability of Coherent Structures
Society Hill Ballroom C & D

6:30 PM - 7:15 PM

SIAG/NWCS Business Meeting

Society Hill Ballroom C & D

Complimentary beer and wine will be served.

Key to abbreviations and symbols



= Business Meeting



= Coffee Break



= Refreshments Served

IP

= Invited Plenary Speaker

CP

= Contributed Presentation Session

SP

= Special Lecture

MS

= Minisymposium

PD

= Panel Discussion

PP

= Poster Session

*

= Extended Session

**Thursday,
August 11**

**Thursday,
August 11**

8:15 AM - 3:30 PM

Registration
Bromley

8:40 AM - 8:45 AM

Closing Remarks
Society Hill Ballroom C & D

8:45 AM - 9:30 AM

IP7 Parity-Time Symmetry in Optics
Demetrios Christodoulides, University of
Central Florida, USA
Society Hill Ballroom C & D

9:30 AM - 10:00 AM

Coffee Break
Hamilton



10:00 AM - 12:00 PM

Concurrent Sessions

MS43 Solitons, Singularities and Wavebreak-
ing in Hydrodynamics, Nonlinear Optics and
Plasmas - Part IV of IV
Society Hill Ballroom C & D

MS44 Advances in Dispersive Nonlinear
Equations and Integrable Equations - Part III
of III
Society Hill Ballroom B

MS45 Spectral Methods and Stability of Lo-
calized Patterns - Part I of II
Cook

MS46 Nonlinear Dynamics and Coherent
Structures in Neuronal Networks - Part I of II
Reynolds

MS47 Normal Forms and Modulation Equa-
tions - Part I of II
Society Hill Ballroom A1

MS48 Novel Challenges in NLS equations:
integrability, PT-symmetry and Beyond -
Part II of III
Society Hill Ballroom A2

MS49 Existence and Stability of Nonlinear
Waves and Patterns - Part III of IV
Society Hill Ballroom E1

CP5 Stochastic Aspects and Data Analysis
with Applications - Part II
Society Hill Ballroom E2

12:00 PM - 1:45 PM

Lunch Break
Attendees on their own

1:45 PM - 2:30 PM

IP8 The Role of Mathematics in Neuroscience
David Cai, Shanghai Jiao Tong University,
China and Courant Institute of Mathematical
Sciences, New York University, USA
Society Hill Ballroom C & D

2:30 PM - 3:00 PM

Coffee Break
Hamilton



3:00 PM - 5:00 PM

Concurrent Sessions

MS50 Dynamics and Spectral Analysis of
Waves and Signals
Society Hill Ballroom B

MS51 Spectral Methods and Stability of
Localized Patterns - Part II of II
Cook

MS52 Nonlinear Dynamics and Coherent
Structures in Neuronal Networks - Part II of II
Reynolds

MS53 Normal Forms and Modulation
Equations - Part II of II
Society Hill Ballroom A1

MS54 Novel Challenges in NLS equations:
integrability, PT-symmetry and Beyond -
Part III of III
Society Hill Ballroom A2

MS55 Existence and Stability of Nonlinear
Waves and Patterns - Part IV of IV
Society Hill Ballroom E1