

Scientific Program

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[Nonlinear waves, singularities, and turbulence in physical and biological systems - Part 1 of 5](#)

Keywords: waves, turbulence, singularities

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15/07/2019 | 17:00 - 19:00

Room: ME-0-3

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Organizer: Pavel Lushnikov

Organizer: Alexander Korotkevich

Summary:

Appearance of waves and formation of singularities are important problems in many physical, hydrodynamical and biological systems as well as for the applied mathematics in general. Waves of finite amplitude require solutions beyond linear approximation by taking into account nonlinear effects. Solutions of nonlinear equations usually result in the formation of singularities, coherent structures or solitary waves. Examples of the corresponding phenomena can be observed in filamentation of laser beams in nonlinear media, wave breaking in hydrodynamics and aggregation of bacterial colonies. The minisymposium is devoted to new advances in the theory of nonlinear waves.

17:00

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[Accelerated Simulation for Plasma Kinetics](#)**Authors:**Russel Caflisch. *Courant Institute Of Mathematical Sciences*Denis Silantyev. *Courant Institute, Nyu*Bokai Yann. *Bank Of America*

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[Water waves over multiply-connected domains](#)**Authors:**Jon Wilkening. *Uc Berkeley*David Ambrose. *Drexel University*Jeremy Marzuola. *University Of North Carolina, Chapel Hill*Roberto Camassa. *University Of North Carolina, Chapel Hill*Richard McLaughlin. *University Of North Carolina, Chapel Hill*Quentin Robinson. *North Carolina Central University*

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[Nonlinear Waves over Vortex Patches](#)**Authors:**Christopher Curtis. *San Diego State University*Henrik Kalisch. *University Of Bergen*

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[Frequency Downshift in the Ocean](#)**Authors:**John Carter. *Seattle University*Camille Zaug. *Seattle University*Isabelle Butterfield. *Seattle University*Alex Govan. *Seattle University*