

2018 HARRY KIEVAL LECTURES



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The Many Faces of Dispersive Equations

In this lecture, Dr. Staffilani will introduce one of the most famous equations in physics: the nonlinear Schrodinger equation. She will give a definition of dispersion and will explain how dispersion and nonlinearity come together to generate solitons. She will give an idea of how we are able to determine if such an equation has solitons and how we learn about their properties in spite of the fact that we do not have explicit formulae for them. If time permits, we will also look at this equation as an infinite dimension Hamiltonian system and at some of the properties that we can prove for it and that generalize what we know in the finite dimension case.

GUEST SPEAKER

WHEN

May 4, 2018

10:30 - 11:30 am

WHERE

Taylor Hall
Room 28/31

How the Study of Complex Wave Phenomena Inspires Beautiful Mathematics

Waves are all around us: ocean waves, sound waves, rainbows... Scientists have spent countless hours trying to understand them, to predict them and to harness from them the energy that they encapsulate. In this talk, Dr. Staffilani will try to convey how the mathematical study of these physical phenomena have also created and inspired a whole set of new mathematical tools that are elegant, powerful and also incredibly beautiful in their abstract nature. These tools are now used to answer open problems in completely different settings, from number theory to probability, to symplectic geometry and more.

WHEN

May 4, 2018

3:30 - 5:00 pm

WHERE

Science
Room 151