



DR. GIGLIOLA STAFFILANI
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Massachusetts Institute of Technology

Monday through Wednesday

April 10 - April 12, 2017

at 4:00PM

UNIVERSITY HALL 4010

Main Campus



COLLEGE OF NATURAL SCIENCES
AND MATHEMATICS
THE UNIVERSITY OF TOLEDO

Department of Mathematics and Statistics
est. 1917

100 Years

Mathematics and Statistics Department

The University of Toledo, College of Natural Sciences and Mathematics

Shoemaker Lecture Series

Supported by the Richard Shoemaker Funds

Lecture 1: The many faces of dispersive equations as infinite dimensional Hamiltonian systems.

Abstract: In this lecture, I will give an overview of several results obtained for dispersive and wave equations that are Hamiltonian systems. I will talk about conservation laws, Strichartz estimates, energy transfer, Gibbs measures and non-squeezing theorems.

Lecture 2: Energy transfer for certain nonlinear Schrodinger (NLS) initial value problems

Abstract: In this lecture, I will concentrate on the question of energy transfer and weak turbulence. I will first show how bounds in time of higher Sobolev norms of solutions to certain NLS are related to energy transfer, then I will show some recent results on polynomial bounds for these norms.

Lecture 3: Almost sure well-posedness and randomization of initial data.

Abstract: In this lecture, I will go back to the concept of Gibbs measure, outline the work of Bourgain for the 2D cubic nonlinear periodic NLS and I will describe further results on almost sure well-posedness obtained by randomizing the initial data.