Courant Institute of Mathematical Sciences  
Mathematics Colloquium  
May 5, 2014  

Speaker: Patrick Gerard, Université Paris-Sud and Institut Universitaire de France  

Title: Lax pairs, Hankel operators and transition to high frequencies  

Abstract:  

I will discuss a new Hamiltonian system on the Hardy space of the disc, which arises as the completely resonant form of some nonlinear wave equation on the circle.  

This system turns out to admit a Lax pair involving Hankel operators. I will explain how this structure allows to describe qualitative properties of the solutions, including possible large time transition to high frequencies.