Speaker: Professor Sijue Wu, University of Michigan

Title: Almost global wellposedness of the 2-D full water wave problem

Abstract:

We consider the problem of global in time existence and uniqueness of solutions of the 2-D infinite depth full water wave equation. It is known that this equation has a solution for a time period $[0, T/\epsilon]$ for initial data of form $\epsilon \Psi$, where $T$ depends only on $\Psi$. We show that for such data there exists a unique solution for a time period $[0, e^{T/\epsilon}]$. This is achieved by better understandings of the nature of the nonlinearity of the full water wave equation.