

MIT/HARVARD ANALYSIS SEMINAR

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will speak on:

"Symplectic non-squeezing for the KdV flow"

Date : *Friday, April 14, 2006*

Time : *4:15pm*

Location: *Science Center, Room 222*

Abstract: In this talk I will present a symplectic non-squeezing result for the Korteweg-de Vries (KdV) flow on the torus \mathbb{T} obtained with Colliander, Keel, Takaoka and Tao. This result is similar to the one obtained for the NLS flow by Bourgain, and extends some work of Kuksin which initiated this line of investigation into non-squeezing results for infinite dimensional Hamiltonian systems. A major difficulty here is the lack of any sort of smoothing estimate which would allow us to easily approximate the infinite dimensional KdV flow by a finite-dimensional Hamiltonian flow. To resolve this problem we are forced to invert the Miura transform and work on the level of the modified KdV (mKdV) equation, for which smoothing estimates are available.