

INVARIANT MEASURES AND THE SOLITON RESOLUTION
CONJECTURE

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The soliton resolution conjecture for the focusing nonlinear Schrödinger equation (NLS) is the vaguely worded claim that a global solution of the NLS, for generic initial data, will eventually resolve into a radiation component that disperses like a linear solution, plus a localized component that behaves like a soliton or multi-soliton solution. Considered to be one of the fundamental problems in the area of nonlinear dispersive equations, this conjecture has eluded a proof or even a precise formulation till date. I will present a theorem that proves a "statistical version" of this conjecture at mass-subcritical nonlinearity. The proof involves a combination of techniques from large deviations, PDE, harmonic analysis and bare hands probability theory.

Keywords: Nonlinear Schrödinger Equation, Invariant Measure, Soliton, Large Deviations

- [1] CHATTERJEE, S. (2012). Invariant measures and the soliton resolution conjecture. *Preprint*. Available at <http://arxiv.org/abs/1203.4027>