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Invariant Gibbs measures for the nonlinear Schrödinger equations on the circle and the real line

Abstract

In the this talk, we first go over the construction of invariant Gibbs measures for the nonlinear Schrödinger equations on the circle by Bourgain '94. Then, we discuss the situation on the real line by taking larger and larger periods. In particular, we realize the limiting Gibbs measure on the real line as a diffusion process in x and prove its invariance for (sub-)quintic NLS on the real line.