Karlsruhe Institute of Technology

Seminar of the Work Group
Nonlinear Partial Differential Equations
SS 23

May 16th, 2023, 14:45 - 15:25
Seminar room: SR 3.068

Quantitative Quasi-invariance for Gaussian Measures Under the NLS Flow and an Application.

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Abstract

In the statistical study of Hamiltonian PDEs out of the equilibrium (lack of invariant measures), it is a natural question to understand the transport properties for canonical gaussian measures. In this talk, I will explain the main strategy to prove the quasi-invariance of Gaussian measures at (relatively) high regularities along the 2D NLS flow on the torus, with L^p bounded Radon-Nikodym density (with respect to some weighted Gaussian measure). As an application, we obtain the almost sure multilinear smoothing effect of the cubic NLS on the torus, which cannot be expected for deterministic initial data.