

北京理工大学

数学与统计学院学术报告

## **Evolution of gaussian fields by the flow of the nonlinear Schrödinger equation**

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**地点**: 文萃F 703

摘要: We will discuss the non linear Schrödinger equation with data distributed according to gaussian fields. These fields are invariant under the free evolution and the question is how much the non linear interaction affects the invariance property. We will present a recent result, obtained in collaboration with Chenmin Sun, showing that for the three dimensional energy critical problem the law of the solution at any time is absolutely continuous with respect to the law of the initial gaussian field. We are therefore in slightly out of equilibrium regime. It should be emphasized that, thanks to the work by Aizenman and Duminil-Copin, we do not expect to reasonably define a Gibbs energy critical problem. Therefore measure for the an consideration of general gaussian fields becomes even more natural. The main new idea is the use of a cancellation of (probabilistically) resonant contributions in a modified energy estimate. We also rely on several techniques developed in recent years in the field of probabilistic well-posedness of dispersive PDE's. We will overview these ideas and techniques.

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