



北京理工大学

PDE RIT SEMINAR

Nonlinear Schrodinger Equation as a Mean-field Equation

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Abstract: In this Research Interaction Team (RIT) seminar, we introduce the time-dependent nonlinear Schrödinger equation (NLSE) from the perspective of the mean-field approximation of the dynamics of many-body quantum systems. In particular, we review some fundamental dispersive PDE results regarding the NLSE and show how the NLSE can provide a rigorous approximation to the dynamics of interacting many-body quantum systems.

摘要: 在本次 PDE Research Interaction Team (RIT) seminar 上, 我们将从多体量子系统动力学的平均场近似角度, 介绍含时非线性薛定谔方程 (NLSE)。具体来说, 我们会回顾 NLSE 相关的一些基本色散偏微分方程结论, 并说明 NLSE 如何为相互作用的多个量子系统的动力学提供一个严格的近似描述。