



复旦大学数学科学学院
数学综合报告会

报告题目: **Dynamics of periodic Toda chains with a large number of particles**

报告人: Professor Thomas Kappeler

(Institute of Mathematics, University of Zurich)

报告时间: 2016-08-19 星期五 10:10-11:00

报告地点: 光华东主楼 1801

摘要: The topic of my four lectures are integrable PDEs, a class of evolution equations widely used in applications in physics and the engineering sciences, but also within mathematics such as in geometry and probability theory. I plan to discuss the method of normal forms, being one of the principal tools to analyze them, and present three recent results in the field, each of them representing a different application of this method: (1) a KAM theorem for semi-linear Hamiltonian perturbations of the defocusing NLS equation on the circle; (2) new results on the wellposedness / illposedness of the KdV, KdV2, and mKdV equations in spaces of functions of low regularity and spaces of distributions; (3) a study of the Toda lattice, describing in a limiting regime, the asymptotics when the number of particles tends to infinity.

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