


复旦大学数学科学学院
数学综合报告会

报告题目：Riemann-Hilbert approach to asymptotic problems of some integrable systems

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报告摘要：

In this talk, we report our recent work on the asymptotic analysis of three integrable systems with second-order and third-order Lax pairs by Riemann-Hilbert approach. The three integrable systems are the focusing NLS equation, the focusing KE equation and the good Boussinesq equation. After introduction, the second part introduces the long-time asymptotic behaviors of two separable plane waves of the focusing NLS equation. The third part focuses on the far-field behaviors of multiple-pole solitons of the focusing NLS equation in the large-order limit. The fourth part considers the long-time asymptotics of the focusing KE equation with nonzero boundary conditions at infinity is reported briefly. Finally, we report out recent result on the long-time asymptotics of the initial-value problem for the good Boussinesq equation on the line, which is a joint work with J. Lenells and C. Charlier at KTH Royal Institute of Technology in Sweden [arXiv:2003.04789v1 [math.AP] 10 Mar. 2020].

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