

数学与系统科学研究院

计算数学所学术报告

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报告题目:

**Long-time asymptotics of the
focusing Kundu-Eckhaus equation
with nonzero boundary conditions**

邀请人: 胡星标 研究员

报告时间: 2017 年 4 月 22 日 (周日)

下午 15:00-16:00

报告地点: 数学院南楼七层

702 教室

Abstract:

The long-time asymptotics of the focusing Kundu-Eckhaus equation with nonzero boundary conditions at infinity is investigated by the nonlinear steepest descent method of Deift and Zhou. Three asymptotic sectors in space-time plane are found: the plane wave sector I, plane wave sector II and an intermediate sector with a modulated one-phase elliptic wave. The asymptotic solutions of the three sectors are proposed by successively deforming the corresponding Riemann-Hilbert problems to solvable model problems. Moreover, a time-dependent g -function mechanism is introduced to remove the exponential growths of the jump matrices in the modulated one-phase elliptic wave sector. Finally, the modulational instability is studied to reveal the criterion for the existence of modulated elliptic waves in the central region.

欢迎大家参加！