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Department of Mathematics
The Chinese University of Hong Kong

數學系
香港中文大學

Phone: (852) 3943 7988-9 • Fax: (852) 2603 5154 • Email: dept@math.cuhk.edu.hk
Rm. 220, Lady Shaw Building, The Chinese University of Hong Kong, Shatin, N.T., Hong Kong

Kinetic Seminar

Defocusing NLS equation with a nonzero background: Painleve asymptotics in two transition regions

by

Professor Engui FAN
Fudan University

Abstract :
We address the Painleve asymptotics of the solution in two transition regions for the defocusing nonlinear Schrodinger (NLS) equation with finite density initial data. The key to prove this result is the formulation and analysis of a Riemann-Hilbert problem associated with the Cauchy problem for the defocusing NLS equation. With the Dbar generalization of the Deift-Zhou nonlinear steepest descent method and double scaling limit technique, in two transition regions, we find that the leading order approximation to the solution of the defocusing NLS equation can be expressed in terms of the solution of the Painleve II equation.

Date :	July 10, 2024 (Wednesday)
Time :	4:00pm – 5:00pm (Hong Kong SAR)
Venue:	Room 222, Lady Shaw Building, The Chinese University of Hong Kong, Shatin

All are Welcome