

Modulational instability, localized wave solutions and dynamics of nonlinear wave systems

ZHENYA YAN

Key Laboratory of Mathematics Mechanization, Institute of Systems Science, AMSS, Chinese Academy of Sciences Beijing 100190, China

Email: zyyan@mmrc.iss.ac.cn

In this talk, we mainly study some integrable nonlinear wave systems. We firstly discuss their modulational instability. Moreover, we present some localized wave solutions (e.g., rational solitons, dark solitons, and rogue waves) of these nonlinear wave systems by using the generalized Darboux transformation method. Finally, we also discuss the dynamical behaviors.