

第 2 2 2 回 広島数理解析セミナー (2 0 1 8 年度)

Hiroshima Mathematical Analysis Seminar No.222

日時 : 4月27日(金) 16:30 ~ 17:30

場所 : 広島大学理学部 B707

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題目 : Center stable manifolds around line solitary waves of Zakharov–Kuznetsov equation

要旨 : We consider the two dimensional Zakharov–Kuznetsov equation on a cylindrical space which is one of a high dimensional generalization of Korteweg–de Vries equation. The orbital and asymptotic stability of the one soliton of Korteweg–de Vries equation on the energy space was proved by Benjamin '72, Pego and Weinstein '92, Mizumachi '01, Martel and Merle '01. We regard the one soliton of Korteweg–de Vries equation as a line solitary wave of Zakharov–Kuznetsov equation on a two dimensional space. The instability of the line solitary wave on the two dimensional whole space is proved by Rousset and Tzvetkov '08. In the case of the cylindrical space which has the periodic transverse direction, I showed the stability of the line solitary waves with the traveling speed less than a critical speed and the instability with the traveling speed larger than the critical speed. In this talk, we show the existence of a center stable manifolds around the unstable line solitary wave for some traveling speeds on the cylindrical space.

広島数理解析セミナー幹事

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