

Localized Coherent Structures and their Interactions for the Melnikov Equation

Yan-Ze Peng

Department of Mathematics, Huazhong University of Science and Technology,
Wuhan, 430074, P. R. China

Reprint requests to Y.-Z. P.; E-mail: yanzepeng@163.com

Z. Naturforsch. **61a**, 253 – 257 (2006); received April 7, 2006

A general functional separation solution, containing two arbitrary functions, is first obtained for the Melnikov equation by means of the singular manifold method. Some novel localized coherent structures are given by appropriately choosing these arbitrary functions, whose interaction properties are numerically studied. The creation and annihilation phenomenon of dromion structure is reported. PACS numbers: 05.45.Yv, 02.30.Ik, 02.30.Jr

Key words: The Melnikov Equation; Singular Manifold Method; Localized Coherent Structure.