2003 Vol.40 No.1 pp.62-66 DOI:

Folded Solitary Waves and Foldons in (2+1) Dimensions

TANG Xiao-Yan[1] and LOU Sen-Yue[1,2,3]

[1] Department of Physics, Shanghai Jiao Tong University, Shanghai 200030, China
[2] School of Mathematics, The University of New South Wales, Sydney, NSW 2052, Australia
[3] Department of Physics, Ningbo University, Ningbo 315211, China
(Received: 2003-1-6; Revised:)

Abstract: A general type of localized excitations, folded solitary waves and foldons, is defined and studied both analytically and graphically. The folded solitary waves and foldons may be "folded" in quite complicated ways and possess quite rich structures and abundant interaction properties. The folded phenomenon is quite universal in the real natural world. The folded solitary waves and foldons are obtained from a quite universal formula and the universal formula is valid for some quite universal (2+1)-dimensional physical models. The "universal" formula is also extended to a more general form with many more independent arbitrary functions.

PACS: 05.45.Yv, 02.30.Jr, 02.30.Ik
Key words: folded solitary wave, foldon

[Full text: PDF]

Close