2003 Vol.40 No.4 pp.443-446 DOI:

A Novel Class of Coherent Localized Structures for the Maccari System

ZHANG Jie-Fang,[1,2] MENG Jian-Ping,[1] and HUANG Wen-Hua[1,3,4]

[1] Institute of Nonlinear Physics, Zhejiang Normal University, Jinhua 321004, China
[2] Department of Mathematical Sciences, Loughborough University, Loughborough, Leicestershire, LE11, 3TU, UK
[3] Department of Physics, Jiangxi Yichun University, Yichun 336000, China
[4] Department of Physics, Huzhou Teachers College, Huzhou 313000, China
(Received: 2003-2-11; Revised:)

Abstract: By means of the Bäcklund transformation, a quite general variable separation solution of the (2+1)-dimensional Maccari systems is derived. In addition to some types of the usual localized excitations such as dromion, lumps, ring soliton and oscillated dromion, breathers solution, fractal-dromion, fractal-lump and chaotic soliton structures can be easily constructed by selecting the arbitrary functions appropriately, a new novel class of coherent localized structures like peakon solution and compacton solution of this new system are found by selecting appropriate functions.

PACS: 05.45.Yv, 02.03.Jr, 02.03.IK
Key words: variable separation solution, (2+1)-dimensional Maccari system, peakon localized structure, compacton localized structure

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