A New Class of (2+1)-Dimensional Combined Structures with Completely Elastic and Non-Elastic Interactive Properties

Cheng-Lin Bai[a], Cheng-Jie Bai[b], and Hong Zhao[a]

[a] Physics Science and Information Engineering School, Liaocheng University,
  Liaocheng 252059, China
[b] Communication School, Shandong Normal University, Jinan 250014, China

Reprint requests to Dr. C.-L. B.; E-mail: lcced_bcl@sina.com

Taking the new (2+1)-dimensional generalized Broer-Kaup system as an example, we obtain an exact variable separation excitation which can describe some quite universal (2+1)-dimensional physical models, with the help of the extended homogeneous balance method. Based on the derived excitation, a new class of combined structures, i. e., semifolded solitary waves and semifoldons, is defined and studied. The interactions of the semifolded localized structures are illustrated both analytically and graphically. – PACS numbers: 05.45.Yv, 02.30.Jr, 02.30.Ik

Key words: (2+1)-Dimensional; Semifolded Solitary Waves; Semifoldons; Interaction;
        Localized Excitations.