Variable Separation of (2+1)-Dimensional General Sasa-Satsuma System Obtained by Extended Tanh Approach

Xian-Jing Lai

Department of Basic Science, Zhejiang Shuren University, Hangzhou, 310015, Zhejiang, China

Reprint requests to X.-J. L.; E-mail: laixianjing@163.com

By means of an extended tanh approach, new types of variable separated solutions u, v, w with two arbitrary lower-dimensional functions of the (2+1)-dimensional general Sasa-Satsuma (GSS) system are derived. Based on the derived variable separation excitation, abundant localized structures such as dromion, peakon and foldon are revealed by selecting appropriate functions p and q. Finally, some elastic and nonelastic interactions among special folded solitary waves are investigated both analytically and graphically. The explicit phase shifts for all the local excitations offered by the common formula are given and applied to these interactions in detail. – PACS numbers: 01.55.+b; 02.30.Jr.