

# Time Evolution of Folded (2+1)-Dimensional Solitary Waves

Song-Hua Ma, Yi-Pin Lu, Jian-Ping Fang, and Zhi-Jie Lv

Department of Physics, Zhejiang Lishui University, Lishui 323000, China

Reprint requests to S.-H. M.; E-mail: msh6209@yahoo.com.cn

Z. Naturforsch. **64a**, 309 – 314 (2009); received March 31, 2008 / revised September 29, 2008

With an extended mapping approach and a linear variable separation approach, a series of solutions (including the Weierstrass elliptic function solutions, solitary wave solutions, periodic wave solutions and rational function solutions) of the (2+1)-dimensional modified dispersive water-wave system (MDWW) is derived. Based on the derived solutions and using some multi-valued functions, we find a few new folded solitary wave excitations.

*Key words:* Extended Mapping Approach; Variable Separation Approach; Modified Dispersive Water-Wave System; Folded Solitary Wave Excitations.

*PACS numbers:* 05.45.Yv, 03.65.Ge