Localized Excitations in a Dispersive Long Water-Wave System via an Extended Projective Approach

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By means of an extended projective approach, a new type of variable separation excitation with arbitrary functions of the (2+1)-dimensional dispersive long water-wave (DLW) system is derived. Based on the derived variable separation excitation, abundant localized coherent structures such as single-valued localized excitations, multiple-valued localized excitations and complex wave excitations are revealed by prescribing appropriate functions. – PACS numbers: 03.65.Ge, 05.45.Yv

Key words: Projective Approach; DLW System; Exact Solution; Coherent Wave Excitation.