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Symbolic Computation on Variable-Coefficient Non-Linear Dispersive Wave Equations

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Abstract : The variable-coefficient non-linear dispersive wave equation is investigated with the aid of symbolic computation. By virtue of a newly developed simplified bilinear method, multi-soliton solutions for such an equation have been derived. Effects of the inhomogeneities of media and nonuniformities of boundaries, depicted by the variable coefficients, on the soliton behavior are discussed with the aid of the characteristic curve method and graphical analysis.

Keywords : dispersive wave equations, multiple soliton solution, Hirota Bilinear Method, symbolic computation
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