

Similarity Reduction and Integrability for the Nonlinear Wave Equations from EPM Model

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(Received: 2000-3-15; Revised:)

Abstract: Four types of similarity reductions are obtained for the nonlinear wave equation arising in the elasto-plastic-microstructure model by using both the direct method due to Clarkson and Kruskal and the improved direct method due to Lou. As a result, the nonlinear wave equation is not integrable.

PACS: 02.20.-b, 11.10.Lm, 02.90.+p

Key words: nonlinear wave equation, similarity reduction, integrability

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