2004 Vol.42 No.6 pp.827-830 DOI:

Bäcklund Transformation and Multiple Soliton Solutions for (3+1)-Dimensional Potential-YTSF Equation

BAI Cheng-Lin,[1] LIU Xi-Qiang,[2] and ZHAO Hong[1]

[1] Department of Communication Engineering, Liaocheng University, Liaocheng 252059, China
[2] School of Mathematical Science, Liaocheng University, Liaocheng 252059, China
(Received: 2004-3-24; Revised:)

Abstract: We study an approach to constructing multiple soliton solutions of the (3+1)-dimensional nonlinear evolution equation. We take the (3+1)-dimensional potential-YTSF equation as an example. Using the extended homogeneous balance method, one can find a Bäcklund transformation to decompose the (3+1)-dimensional potential-YTSF equation into a set of partial differential equations. Starting from these partial differential equations, some multiple soliton solutions for the (3+1)-dimensional potential-YTSF equation are obtained by introducing a class of formal solutions.

PACS: 05.45.Yv, 02.30.Jr
Key words: soliton solutions, extended homogeneous balance method, (3+1)-dimensions, potential-YTSF equation

[Full text: PDF]

Close