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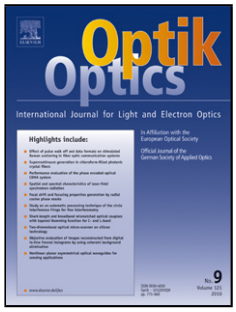

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Author: Melike Kaplan Ahmet Bekir

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Construction of exact solutions to the space-time fractional differential equations via new approach

Melike Kaplan, Ahmet Bekir*

Eskisehir Osmangazi University, Art-Science Faculty,

Department of Mathematics-Computer, Eskisehir-TURKEY

Email : mkaplan@ogu.edu.tr; abekir@ogu.edu.tr

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Abstract

In the present article, the local fractional derivatives and the $exp(-\Phi(\xi))$ method are used to construct the exact solutions of nonlinear space-time fractional partial differential equations. For illustrating the validity of the method, it is applied to the space-time fractional $(3+1)$-dimensional nonlinear Jimbo-Miwa equation and nonlinear Hirota-Satsuma coupled KdV system. This approach is an efficient mathematical tool for solving fractional differential equations and it can be applied to other nonlinear fractional differential equations.

Keywords : Exact solutions, Space-time fractional differential equations, Local fractional derivative, Exp$(-\Phi(\xi))$ method.

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1 Introduction

The nonlinear fractional differential equations (NFDEs) play a significant role in various applications in physics, biology, chemistry, engineering, finance, signal

*Corresponding Author. Tel.: +90 222 2393750; Fax: +90 222 2393578. E-mail address: abekir@ogu.edu.tr

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