

Accepted Manuscript

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PII: S0030-4026(16)31014-2  
DOI: <http://dx.doi.org/doi:10.1016/j.ijleo.2016.09.006>  
Reference: IJLEO 58149

To appear in:

Received date: 7-7-2016  
Accepted date: 2-9-2016

Please cite this article as: Mehmet Ekici, Mohammad Mirzazadeh, Qin Zhou, Seithuti P. Moshokoa, Anjan Biswas, Milivoj Belic, Solitons in Optical Metamaterials with Fractional Temporal Evolution, <![CDATA[Optik - International Journal for Light and Electron Optics]]> (2016), <http://dx.doi.org/10.1016/j.ijleo.2016.09.006>

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# SOLITONS IN OPTICAL METAMATERIALS WITH FRACTIONAL TEMPORAL EVOLUTION

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## Abstract

This paper obtains bright, dark and singular soliton solutions in optical metamaterials with fractional temporal evolution where Jumarie's modified Riemann-Liouville derivative is considered. There are four types of nonlinear metamaterials that are studied. These are Kerr law, power law, parabolic law and dual-power law. The integration scheme that is employed is the extended trial equation method. The existence of these solitons are guaranteed with constraint conditions.

**OCIS** Codes: 060.2310; 060.4510; 060.5530; 190.3270; 190.4370

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