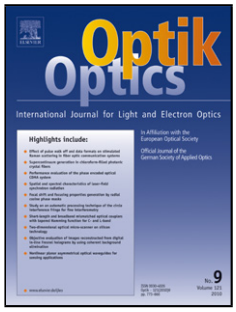

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PII: S0030-4026(16)31279-7
DOI: http://dx.doi.org/doi:10.1016/j.ijleo.2016.10.090
Reference: IJLEO 58362

To appear in:

Received date: 28-8-2016
Accepted date: 25-10-2016

Please cite this article as: Warda Islam, Muhammad Younis, Syed Tahir Raza Rizvi, Optical solitons with time fractional nonlinear Schr*ddoto*dinger equation and competing weakly nonlocal nonlinearity, *<![CDATA[Optik - International Journal for Light and Electron Optics]]>* (2016), http://dx.doi.org/10.1016/j.ijleo.2016.10.090

Optical solitons with time fractional nonlinear Schrödinger equation and competing weakly nonlocal nonlinearity

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Abstract

The optical solitons have been extracted from the model that describes the dynamics of solitons in nonlinear optics with competing weakly nonlocal nonlinearity. The diffraction coefficient and parabolic law nonlinearity are also consider in this time fractional model. The constraint conditions, for the existence of the dark and singular soliton solutions, are also listed. Additionally, a couple of other solutions known as singular periodic solutions, fall out as a by-product of this scheme.

Key words: Optical solitons; time fractional model; nonlocal nonlinearity; integrability.