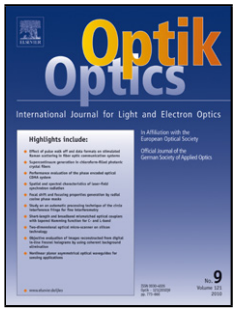

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Author: M.M. El-Borai H.M. El-Owaidy Hamdy M. Ahmed Ahmed H. Arnous Seithuti Moshokoa Anjan Biswas Milivoj Belic

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DARK AND SINGULAR OPTICAL SOLITONS WITH SPATIO-TEMPORAL DISPERSION USING MODIFIED SIMPLE EQUATION METHOD

M. M. El-Borai [1], H. M. El-Owaidy [2], Hamdy M. Ahmed [3],
Ahmed H. Arnous [3], Seithuti Moshokoa [4], Anjan Biswas [4, 5] & Milivoj Belic [6]

[1] Department of Mathematics, Faculty of Science,
Alexandria University, Egypt

[2] Department of Mathematics, Faculty of Science,
Al-Azhar University, Egypt

[3] Department of Engineering Mathematics and Physics,
Higher Institute of Engineering, El-Shorouk, Cairo, Egypt.

[4] Department of Mathematics and Statistics,
Tshwane University of Technology, Pretoria-0008, South Africa

[5] Department of Mathematics, Faculty of Science,
King Abdulaziz University, Jeddah-80203, Saudi Arabia

[6] Science Program, Texas A & M University at Qatar,
PO Box 23874, Doha, Qatar

Abstract

This paper obtains optical soliton solutions to the governing nonlinear Schrödinger's equation that is studied with spatio-temporal dispersion. The integration algorithm that is employed in this paper is the modified simple equation method. This leads to dark and singular soliton solutions that are valuable in the field of optoelectronics. The soliton solutions appear with all necessary constraints that are deemed necessary for them to exist. There are four tpes of nonlinear fibers studied in this paper. They are Kerr law, power law, parabolic law and the dual-power law.

Keywords: solitons, spatio-temporal dispersion; modified simple equation method.