

Accepted Manuscript

Title: RESONANT OPTICAL SOLITONS WITH QUADRATIC-CUBIC NONLINEARITY BY SEMI-INVERSE VARIATIONAL PRINCIPLE

Author: Anjan Biswas Malik Zaka Ullah Qin Zhou Seithuti P. Moshokoa Houria Triki Milivoj Belic



PII: S0030-4026(17)30845-8  
DOI: <http://dx.doi.org/doi:10.1016/j.ijleo.2017.07.028>  
Reference: IJLEO 59424

To appear in:

Received date: 14-4-2017  
Accepted date: 10-7-2017

Please cite this article as: Anjan Biswas, Malik Zaka Ullah, Qin Zhou, Seithuti P. Moshokoa, Houria Triki, Milivoj Belic, RESONANT OPTICAL SOLITONS WITH QUADRATIC-CUBIC NONLINEARITY BY SEMI-INVERSE VARIATIONAL PRINCIPLE, <![CDATA[Optik - International Journal for Light and Electron Optics]]> (2017), <http://dx.doi.org/10.1016/j.ijleo.2017.07.028>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

# RESONANT OPTICAL SOLITONS WITH QUADRATIC-CUBIC NONLINEARITY BY SEMI-INVERSE VARIATIONAL PRINCIPLE

Anjan Biswas<sup>1,2</sup>, Malik Zaka Ullah<sup>2</sup>, Qin Zhou<sup>3</sup>,  
Seithuti P. Moshokoa<sup>1</sup>, Houria Triki<sup>4</sup> & Milivoj Belic<sup>5</sup>

<sup>1</sup> Department of Mathematics and Statistics,  
Tshwane University of Technology, Pretoria-0008, South Africa

<sup>2</sup> Operator Theory and Applications Research Group, Department of Mathematics,  
Faculty of Science, King Abdulaziz University, PO Box-80203, Jeddah-21589, Saudi Arabia

<sup>3</sup> School of Electronics and Information Engineering,  
Wuhan Donghu University, Wuhan, 430212, PR China

<sup>4</sup> Radiation Physics Laboratory, Department of Physics, Faculty of Sciences,  
Badji Mokhtar University, P. O. Box 12, 23000 Annaba, Algeria

<sup>5</sup> Science Program, Texas A & M University at Qatar,  
PO Box 23874, Doha, Qatar

## Abstract

This paper obtains resonant soliton solutions to the nonlinear Schrödinger's equation that is studied in quadratic-cubic nonlinear media. The semi-inverse variational principle is applied to retrieve the soliton solution. The soliton parameters appear with restrictions that are also presented.

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

**Key words:** solitons; semi-inverse variation; quadratic-cubic law.

Download English Version:

<https://daneshyari.com/en/article/5025286>

Download Persian Version:

<https://daneshyari.com/article/5025286>

[Daneshyari.com](https://daneshyari.com)