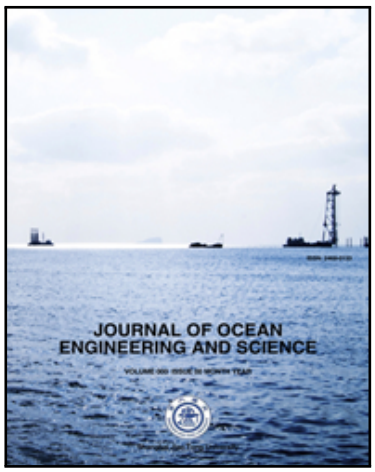

Soliton solution of the generalized modified BBM equation and the generalized Boussinesq equation

Ozkan Guner

PII: S2468-0133(17)30053-0
DOI: 10.1016/j.joes.2017.08.006
Reference: JOES 56

To appear in: *Journal of Ocean Engineering and Science*

Received date: 8 June 2017
Revised date: 31 July 2017
Accepted date: 27 August 2017

Please cite this article as: Ozkan Guner, Soliton solution of the generalized modified BBM equation and the generalized Boussinesq equation, *Journal of Ocean Engineering and Science* (2017), doi: 10.1016/j.joes.2017.08.006

Soliton solution of the generalized modified BBM equation and the generalized Boussinesq equation

Ozkan Guner[a*]

[a]Cankiri Karatekin University, Faculty of Economics and Administrative Sciences, Department of International Trade, Cankiri-TURKEY

Email: ozkanguner@karatekin.edu.tr

September 14, 2017

Abstract

In this paper, we obtained the topological soliton solution of the (1+1)-dimensional generalized modified Benjamin–Bona–Mahony equation and shock wave solution of the generalized Boussinesq equation. We get that solutions by using solitary wave ansatz in terms of $\tanh^p$ functions. The velocity and the free parameters are the physical parameters in the soliton solutions. They can be obtained as functions of the dependent model coefficients. The domain restriction were also identified in the process. we hope that in nonlinear dynamical system these solutions will be explain some nonlinear physical phenomena.

Keywords: Exact solution; topological soliton solution; shock wave solution; generalized modified Benjamin–Bona–Mahony equation; generalized Boussinesq equation

PACS (2010): 02.30. Jr, 04.20. Jb, 05.45. Yv.

1 Introduction

Nonlinear evolution equations (NLEEs) are being studied for a few decades. They are often used to represent the motion of the isolated waves, localized in a small part of space in many fields such as optical fibers, neural physics, solid state physics, hydrodynamics, diffusion process, plasma physics and nonlinear optics.

*Corresponding Author. E-mail address: ozkanguner@karatekin.edu.tr