



Exact Solutions of a Klein-Gordon System by (G'/G)-Expansion Method and Weierstrass Elliptic Function Method

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Abstract: This paper deals with the exact solutions of a Klein-Gordon system of equations. The (G'/G)-expansion method has been employed to derive kink solutions, solitary wave solutions and singular solutions. Solitary wave solutions have also been derived for the Klein-Gordon system using the Weierstrass elliptic function method.

Keywords: (G'/G)-expansion method; Klein-Gordon equation; solitary wave solutions; Weierstrass elliptic function.

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1 Introduction

The nonlinear evolution equations (NLEEs) are the most important fields of research in applied mathematics and theoretical physics. There are several forms of NLEEs that arise in various branches of science and engineering [1–5]. Exact solutions of NLEEs play an important role as they provide a better insight into the various aspects of the problem which leads to significant applications. Several methods such as the tanh method [6–11], exponential function method [12], Jacobi elliptic function (JEF) method [13–15], mapping methods [16–21] have been applied in the last few decades and the results have been reported. Also, many physical phenomena have been governed by systems of

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