


Turkish Journal of Mathematics

Turkish Journal

of

Mathematics

 [Keywords](#)
 [Authors](#)



math@tubitak.gov.tr

[Scientific Journals Home](#)
[Page](#)

Derivation of Separable Amplitude Equations by Multiple Scales Method

Mehmet Naci ÖZER

Department of Mathematics, Art and Science Faculty,

University of Osmangazi,

26480, Eskişehir-TURKEY

e-mail: mnozer@fen.ogu.edu.tr

Dursun ESER

Department of Mathematics, Art and Science Faculty,

University of Osmangazi,

26480, Eskişehir-TURKEY

deser@fen.ogu.edu.tr

Abstract: The method of multiple scales is used to derive separable nonlinear Schrödinger equations as amplitude equation from three component 2D nonlinear Klein-Gordon Equation. We further discuss the integrability of the derived separable amplitude equations and reduce them into finite dimensional Hamiltonian systems. Finally we give first integrals for the reduced systems.

Key Words: Multiple Scales Method, Three Component 2D Nonlinear Klein-Gordon Equation, Separable Amplitude NLS Equation, Spectral Problem, Separable Integrable Hamiltonian system. 1991
Mathematics Subject Classification: 35B20, 35Q53, 35Q55, 58G18.

Turk. J. Math., **22**, (1998), 309-318.

Full text: [pdf](#)

Other articles published in the same issue: [Turk. J. Math., vol.22, iss.3.](#)