The Bright Soliton Solutions of Two Variable-Coefficient Coupled Nonlinear Schrödinger Equations in Optical Fibers

Deng-Shan Wang[a,c] and Yifang Liu[b]

[a] CEMA and CIAS, Central University of Finance and Economics, Beijing, 100081, China
[b] School of Economics, Central University of Finance and Economics, Beijing, 100081, China
[c] BNLCMP, Institute of Physics, Chinese Academy of Sciences, Beijing 100190, China

Reprint requests to D.-S. W.; E-mail: wangdsh1980@yahoo.com.cn

In this paper, with the aid of symbolic computation the bright soliton solutions of two variable-coefficient coupled nonlinear Schrödinger equations are obtained by Hirota's method. Some figures are plotted to illustrate the properties of the obtained solutions. The properties are meaningful for the investigation on the stability of soliton propagation in the optical soliton communications.

Key words: Hirota's Method; Symbolic Computation; Bright Soliton Solution; Coupled Nonlinear Schrödinger Equations.