Application of the Homotopy Analysis Method for Systems of Differential-Difference Equations

Oi Wang

Department of Applied Mathematics, Shanghai University of Finance and Economics, Shanghai 200433, P.R. China

Reprint requests to O. W.; E-mail: wangqee@gmail.com

Z. Naturforsch. **65a**, 811 – 817 (2010); received August 13, 2009 / revised November 26, 2009

PACS numbers: 02.30.Xx; 02.30.Mv; 02.60.Li

Key words: Homotopy Analysis Method; Relativistic Toda Lattice System.

The homotopy analysis method is used for solving systems of differential-difference equations. To demonstrate the validity and applicability of the presented technique the Volterra lattice system is taken as example. Analysis results show that the method is very effective and yields very accurate results.