Nonlinear Waves on the Surface of a Magnetohydrodynamic Fluid Column

Doo-Sung Lee

Department of Mathematics, College of Education, Konkuk University, 1, Hwayang-Dong, Kwangjin-Gu, Seoul, Korea

Reprint requests to Prof. D.-S. L.; E-mail: dslee@kkucc.konkuk.ac.kr

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The method of multiple scales is used to analyse the nonlinear propagation of waves on the surface of a fluid column in the presence of a magnetic field. The evolution of the amplitude is governed by a nonlinear Schrödinger equation which gives the criterion for modulational instability. Numerical results are given in graphical form

Key words: Multiple Scales Method; Schrödinger Equation; Magnetohydrodynamic Fluid Column.