

SOLITONS IN THE CLOSE BINARY SYSTEMS

KENJI TANABE

Okayama Univ. of Science

tanabe@das.ous.ac.jp

Propagation of the surface waves of the lobe-filling components of close binary systems is investigated theoretically. Such waves are considered to be analogous to the gravity waves of water on the earth. As a result, the equations of the surface wave in the rotating frame of reference are reduced to the so-called Korteweg-de Vries(KdV) equation and non-linear Schroedinger(NLS) equation according to its "depth". Each of these equations is known to have the solution of soliton. When this soliton is sent to the other component of the binary system through the Lagrangian point, it can give rise to the flare activity observed in some kinds of close binary systems.