Abstract Submitted
for the DFD05 Meeting of
The American Physical Society

On instability of large amplitude long interfacial waves TAE-CHANG JO, New Mexico Institute of Mining and Technology, WOOYOUNG CHOI, New Jersey Institute of Technology — The evolution of large amplitude interfacial waves in a system of two layers of different densities is investigated using a strongly nonlinear long wave model. A local stability analysis is presented to show that the solitary wave solution of this inviscid model suffers from a Kelvin- Helmholtz type instability due to a velocity discontinuity across the interface between two layers. A numerical filter is used to eliminate the short-wave instability (that is absent in real observations) and its effects on long-term numerical simulations are discussed.

Wooyoung Choi
New Jersey Institute of Technology

Date submitted: 05 Aug 2005 Electronic form version 1.4