Meeting: 1003, Atlanta, Georgia, AMS CP 1, AMS Contributed Paper Session

1003-35-490 **Dambaru D Bhatta*** (bhattad@utpa.edu), Department of Mathematics, University of Texas-Pan American, 1201 W. University Drive, Edinburg, TX 78541, and **Lokenath Debnath**.

On Transient Development of Water Waves over a Viscoelastic Ocean Bed.

A two-layer analysis of the transient development of water waves over a viscoelastic ocean bed is presented here. This is a two-dimensional initial value investigation of the transient development of surface and internal wave motions governed by harmonic pressure distribution acting on the free surface in an inviscid liquid over a viscous and elastic ocean bed. The equations of motion and the equation of continuity are described in terms of velocity potential and stream functions. The solution of this problem is obtained by using Laplace and Fourier transform methods. Limiting case of the layers to obtain free surface elevation is also presented. A simple form of pressure distribution can be used to evaluate the transient wave integral for the limiting case when the upper inviscid fluid is absent. (Received September 16, 2004)