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## Abstracts of Short Communications and Posters

### Section:

## 16. Applications

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**Resonant Phenomena in Linear and Nonlinear Water Waves**

Some linear and nonlinear initial value problems in water of finite or infinite depth under the action of surface pressure moving at a constant speed will be presented. Attention will be given to evolution equations associated with these problems. A variational principle for Rossby waves in beta-plane approximation is formulated. Some conservation laws are discussed from full nonlinear equations of Rossby waves in oceans.

References: Lokenath Debnath, Nonlinear Water Waves, Academic Press, Boston, 1995.

NamChul Kim and Lokenath Debnath, Resonant wave interactions in a weakly viscous liquid, International Journal of Nonlinear Mechanics (to appear), 1998.

Lokenath Debnath, Nonlinear Partial Differential Equations for Scientists and Engineers, Birkhauser, Verlag, Boston, 1997.