

# MATHEMATICS COLLOQUIUM

## DISTINGUISHED LECTURE SERIES

### *LINEAR AND NONLINEAR WAVES*

#### **Professor Lokenath Debnath**

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**Abstract:** Water waves, tsunamis and hurricanes are the most observable phenomena in Nature. Some examples and properties of linear and nonlinear waves will be discussed with applications. Special attention will be given to ocean waves in a rotating ocean and resonant phenomena of waves in a running stream.

#### ***References***

1. Lighthill, M.J., *Waves in Fluids*. Cambridge University Press, 1978, 504 pages.
2. Roger Knobel, *An introduction to the mathematical theory of waves*. American Mathematical Society, Providence, RI; Institute for Advanced Study, Princeton, NJ, 2000, 196 pages.
3. Lokenath Debnath, On linear and nonlinear Rossby waves in an ocean. *Journal of Mathematical Analysis and Applications*, 333 (2007), no. 1, 164-190.
4. Lokenath Debnath, Water Waves and the Korteweg-de Vries Equations, *Encyclopedia in Applied Mathematics*, Springer Verlag (2007), pages 100-165.
5. Lokenath Debnath, *Nonlinear Water Waves*, Academic Press, San Diego, 1995, 567 pages.
6. Lokenath Debnath, *Nonlinear Partial Differential Equations for Scientists and Engineers*, (Second Edition), Birkhauser Verlag, Boston (2005), 737 pages.

Date: Thursday, September 13, 2007  
Time: 12:00 - 1:00pm  
Place: J. Wiener Lecture Hall, MAGC 1.302

Refreshments will be served at 11:50pm.

For further information or for special accommodations, contact Dr. Karen Yagdjian at 381-2145, via email at [yagdjian@utpa.edu](mailto:yagdjian@utpa.edu), or visit [www.math.panam.edu/colloquia.html](http://www.math.panam.edu/colloquia.html)