PHYSICAL MATHEMATICS SEMINAR

INTERNAL GRAVITY WAVES AND TOPOGRAPHY: EMISSION, PROPAGATION AND REFLECTION

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ABSTRACT:

We study the interplay between internal gravity waves and topography. When internal waves are impinging onto a sloping bed, striking phenomena are expected to occur close to the slope due to the unusual reflection properties. We have devised several internal wave generators to study experimentally this reflection. Studies with or without rotation of the tank will be presented.

We have also designed a simple laboratory experiment to study internal tides generation. We consider a steep continental shelf, for which the internal tide is shown to be emitted from the critical point. We will discuss the dependence of the width of the emitted beam on the local curvature of topography and on viscosity, by drawing an analogy with an oscillating cylinder in a static fluid. Although the core of the talk will be devoted to experimental results, several theoretical points will be presented.

TUESDAY, MARCH 20, 2007
2:30 PM
Building 2, Room 146

Reception at 3:30 PM in Building 2, Room 349
(Applied Math Common Room)