

COLLOQUIUM
UNIVERSITY OF PITTSBURGH
OCTOBER 27, 2006
704 THACKERAY HALL
4:00 P.M.

SPEAKER: **PROFESSOR TRAIAN ILIESCU**

DEPARTMENT OF MATHEMATICS
VIRGINIA POLYTECHNIC INSTITUTE

TITLE: **NUMERICAL SIMULATION OF GRAVITY CURRENTS IN THE
OCEAN**

ABSTRACT: Oceanic gravity currents are cold (dense) water masses which are released into the large-scale ocean circulation from high-latitude and marginal seas. The entrainment of ambient waters into oceanic gravity currents is recognized as being a prominent oceanic process with significant impact on the ocean general circulation and climate.

The numerical simulation of gravity currents at realistic parameters represents a grand computational challenge. This talk will present recent developments in this area, including numerical results from nonhydrostatic simulations and improved LES models for stratified flows. Mathematical modeling challenges and a new multiscale framework will be also described.

This talk will be at a general level. Graduate students are strongly encouraged to attend.