Date: **November 18th, 2005**

Time: **11:00 AM**

Location: **Maryland Hall 110**

Speaker: **Dr. Gerhard H. Jirka**
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University of Karlsruhe, Germany

Title: **"Shallow Flows"**

Abstract

Many flows with environmental or geophysical applications are of the shallow water type, i.e. their horizontal length scales are much larger than their depth, so that they behave as quasi-two-dimensional. Typical examples are flows in rivers, estuaries, lakes and coastal waters, as well as stratified atmospheric and oceanic flows. These flow types are prone to transverse shear instabilities that lead to large-scale horizontal vortex structures, which in turn govern both momentum exchange and heat and mass transport processes. Results from investigations by means of laboratory experiments, hydrodynamic instability analyses and numerical simulations will illustrate the underlying mechanisms and transport properties.