

Date: April 25

Time: 11:00 AM

Location: Maryland Hall 110

Speaker: Dr. Balasubramanya Nadiga

Los Alamos National Laboratory

Title: *"Eddy Fluxes in Geostrophic Turbulence"*

Abstract

Given its importance in parameterizing eddies, the orientation of eddy flux of potential vorticity in geostrophic turbulence is considered. A classical ensemble- or time-average point of view and a second scale-decomposition point of view are considered. In either approach, a net alignment of the eddy flux of potential vorticity with the appropriate mean gradient or the large-scale gradient of potential vorticity is required. This alignment is, however, found to be very weak. A key finding of the study is that in the scale decomposition approach, there is strong correlation between the eddy-flux and a nonlinear combination of resolved gradients. This strong correlation is absent in the classical decomposition. This finding points to a new model to parameterize the effects of eddies in global ocean circulation. Elements of Temporal Eulerian Mean and Temporal Residual Mean theories will be considered.