Geophysical Research Abstracts
Vol. 14, EGU2012-6271-1, 2012
EGU General Assembly 2012

Lagrangian Signatures of Baroclinically Unstable Flow in a Primitive Equation Model: From the Onset to the Decay of Exponential Perturbation Growth

S. Riha (1) and C. Eden (2)

(1) Instituto de Oceanografia, Faculdade de Ciências da Universidade de Lisboa, Portugal, (2) KlimaCampus Hamburg, Germany

Lagrangian drifters are a major source of data describing the features of fully developed turbulence in the ocean. We use a numerical primitive equation model in z-coordinates to study the kinematic information sampled by synthetic Lagrangian particles in baroclinically unstable zonal channel flows in the presence of a background planetary vorticity gradient. The objective is to characterize the sensitivity of Lagrangian statistics to changes in the background flow and corresponding changes in the dominant small-amplitude wave structures. The study is a first step in an attempt to link observational kinematic Lagrangian data to the dynamical mechanisms underlying the generation of fully developed turbulence in the ocean.