Geophysical Research Abstracts
Vol. 14, EGU2012-4448, 2012
EGU General Assembly 2012

Direct Statistical Simulation of Geophysical Flows

S. Tobias (1) and B. Marston (2)
(1) University of Leeds, United Kingdom (smt@maths.leeds.ac.uk), (2) Brown University, USA

In this talk I shall present results on the Direct Statistical Simulation of Geophysical Flows. Here the statistics of flows are computed directly via hierarchies of cumulants. I shall discuss two problems. In the first, large-scale dynamics (jets) emerges from a stochastically forced system (at small scales), whilst in the second, large-scale shear flow goes unstable to produce small-scale flow that in turn deterministically modifies the flow. I shall discuss two truncations of the hierarchy and possible simplifications of the model.