
XINWEI YU, 527 CAB, University of Alberta

On the Conserved Quantities of the 2D Surface Quasi-geostrophic Equation

The 2D surface quasi-geostrophic (SQG) equation can be seen as a 2D model equation for the 3D incompressible Euler equations. In this talk we will discuss necessary and sufficient conditions, characterized by Besov and Triebel–Lizorkin type spaces, for the conservation of various conserved quantities of the 2D SQG equation. These conditions can help in the searching of rigorous mathematical framework modeling turbulent flows.