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## **Geophysical flows: stochastic modeling, analysis and computation**

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Geophysical flows largely define the environment in which we live. A challenge for better understanding geophysical phenomena is due to multiscale variability, nonlinearity, and uncertainty in geophysical flows. The need to take stochastic effects into account for modeling geophysical flows has become widely recognized. Stochastic partial differential equations arise naturally as geophysical flow models. The speaker will discuss dynamical issues such as stochastic parameterization, homogenization, random boundary conditions, and quantifying the impact of noise, in the context of modeling and simulating geophysical flows. The mathematical models here are either quasi-geostrophic equations or Boussinesq equations.