

Tropical Convection, Waves, and Climate

Zhiming KUANG
Harvard University

Tropical moist convection is a key component of our climate because of its roles in transporting heat, moisture, momentum, and chemical species, and in rainfall and radiation. Understanding large-scale tropical circulation has been a longstanding challenge because of the enormous range of scales that are involved. Using convective coupled tropical waves and the South Asian Monsoon as examples, we will review our recent work of using cloud-system-resolving models to gain insights to large-scale tropical flows, as well as the value of theoretical understanding in guiding observational analysis and discussions of climate change.