

# Oceanography Seminar

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## “Oceanic Variability from Mesoscale to Submesoscale”

This presentation focuses on the mesoscale ( $>150\text{km}$  in wavelength) versus submesoscale variability ( $10\text{-}150\text{km}$ ) in the subtropical circulation of the North Pacific Ocean. First, we analyze the AVISO satellite altimetry product, the repeat ship-board ADCP data and output from a  $1/30\text{-deg}$  high-resolution OGCM simulation to contrast the seasonal Subtropical Countercurrent (STCC) variability in the mesoscale-submesoscale ranges. Importance of mesoscale and submesoscale variability in controlling, respectively, the horizontal and vertical circulation, is emphasized. Utilizing the theoretical framework of effective surface quasi-geostrophic (eSQG) dynamics, we explore next the potential of reconstructing the 3D upper ocean circulation features, including the vertical velocity field, from high-resolution sea surface height (SSH) data. Challenges of disentangling the SSH signals associated with the balanced versus unbalanced motions will be raised.

**Thursday August 30, 2018 3:00p.m. MSB 114**