Highlights from:

Semidiurnal nonstationary variance fraction (SNVF) of steric ssh from HYCOM 1/12.5o, 5-year run, computed in frequency (F) space, horizontal wavenumber (K) space from HYCOM's hourly output (hrly) and altimeter-based 10-day sampling (altm), plotted alongside SNVF computed from altimetry in a previous work (Zaron 2017).

Correlations between methodologies is about 80%

Correlations between HYCOM and altimetry (K-space, 10-day sampling) is about 60%

Altimetry results biased low by a factor of 0.92, found to be due to ambiguity in separation of tidal and mesoscale signals in K-space.

Funded by OSTST grant NNX17AH55G, Brian Arbic PI
Highlights from:

High-resolution regional MITgcm simulations near Hawaii for Spring 2006 forced at boundaries by global 2km simulation (MITgcm 1/48°) containing partial internal wave (IW) spectrum.

Reginal simulation configurations:
One-to-One: Same resolution as global run
Finer-Δz: Tripled number of depth levels
Finer-Δx: Increased horizontal resolution to 0.25km
Finer-Both: (included both Δx and Δz increases)

Total kinetic energy spectra at 620m plotted alongside results from observations by McLane Moored Profilers (MMP Obs) located at MMP location #1 (see top right)

Increasing horizontal resolution filled out spectrum (following theoretical Garrett-Munk slope of -2) from about 5 cycles per day (cpd) to about 60 cpd. Increasing both filled spectrum out to Nyquist (72 cpd)

Funded by OSTST grant NNX17AH55G, Brian Arbic PI