Pacific Decadal Variability in CCSM3

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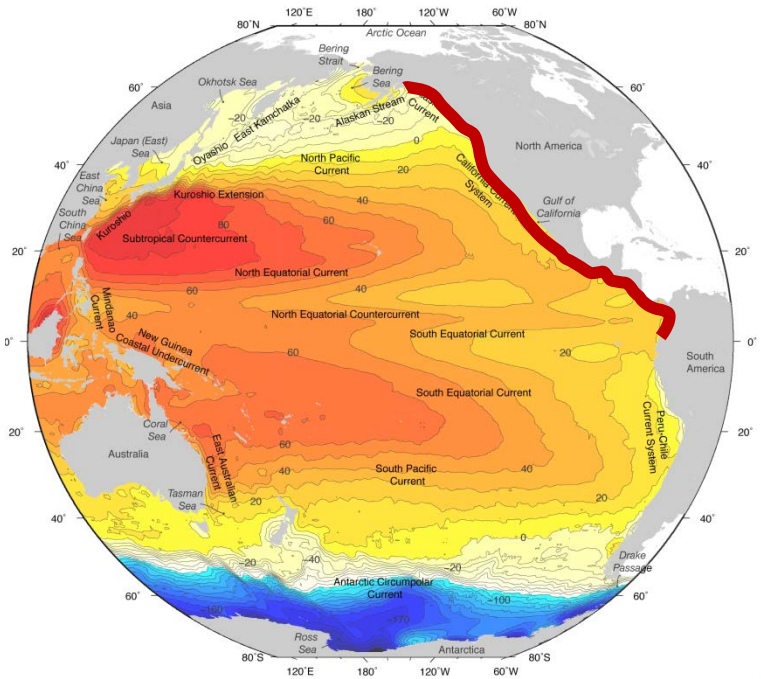
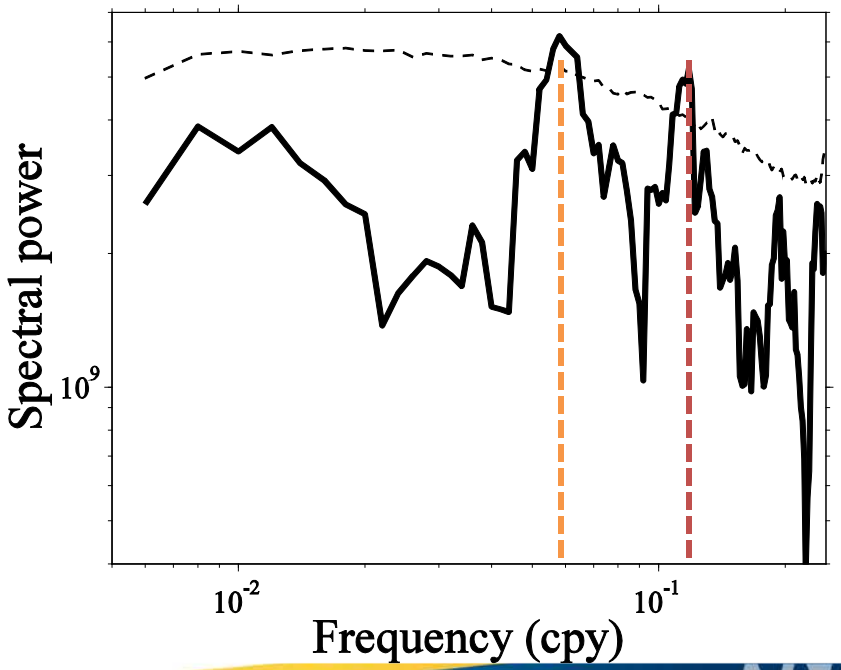
- Significant spectral peaks in North Pacific climate system in CCSM3
  - *eastern* boundary pressure: 17 and 8.5 yr time scales





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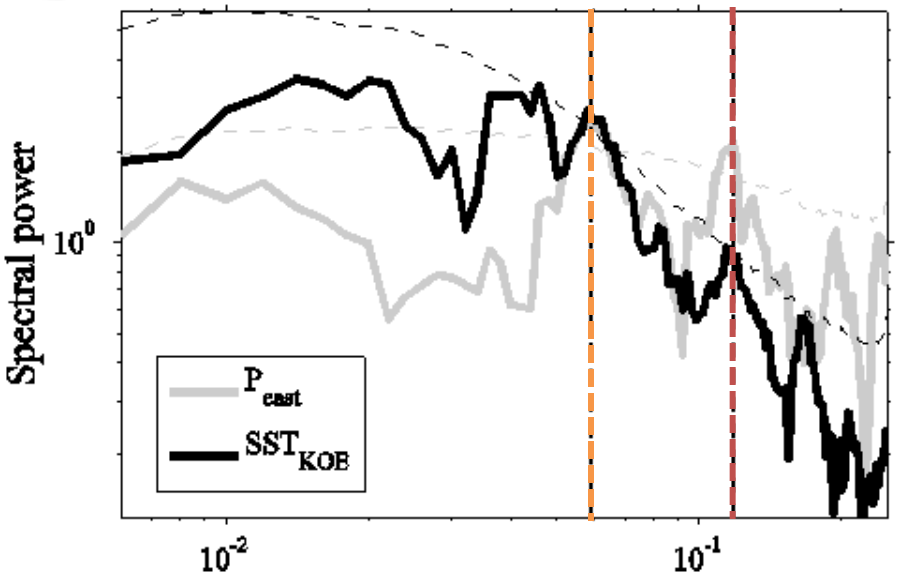
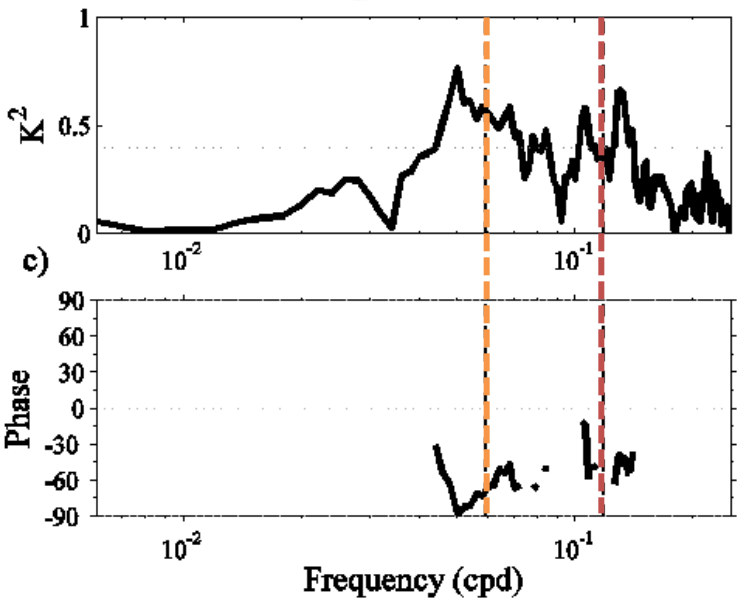
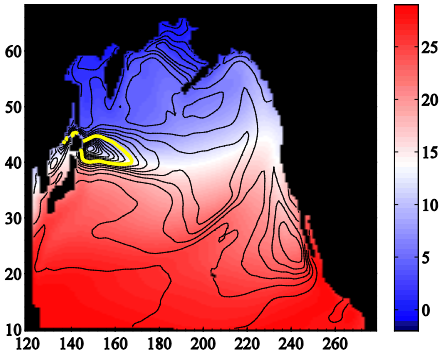
Impact on KOE SSTs

Spectra SST_{KOE} & P_{east}



Coherence SST_{KOE} & P_{east}



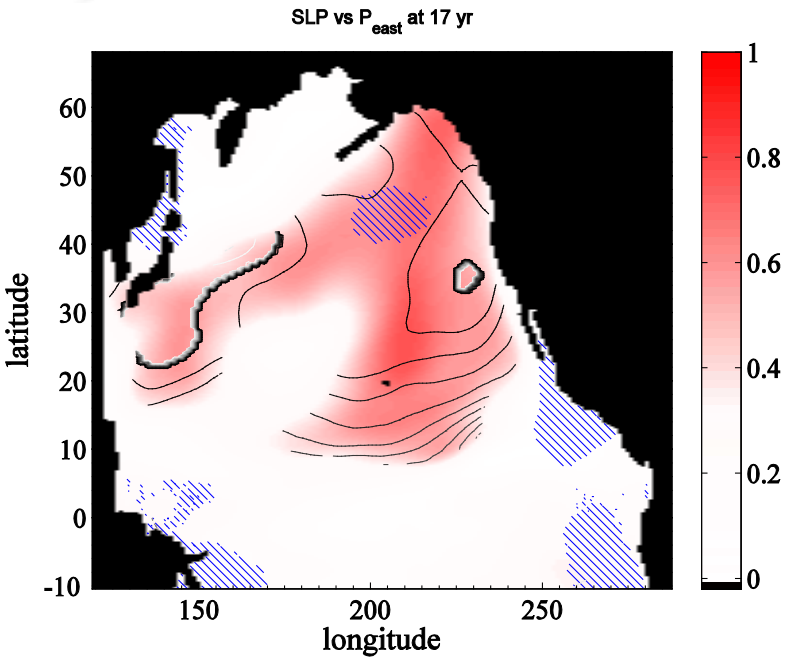


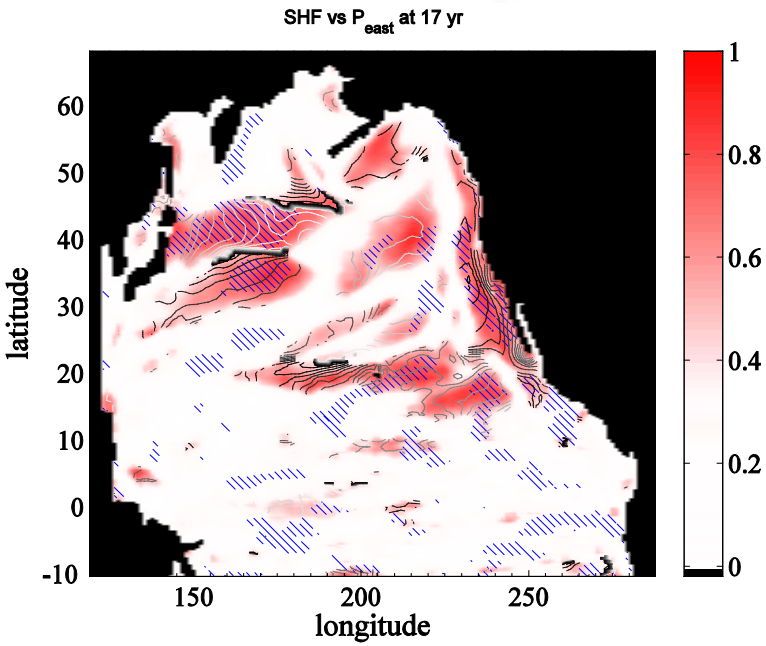
Approach

- What causes spectral peaks in North Pacific climate system?
- We analyze
  - CCSM3
  - 500 year control integration (b30.009)
  - 1990 conditions
  - Annually averaged fields of oceanic and atmospheric variables
- We look for
  - Variables of enhanced variance/covariance at 17 yr time scale

Mid-latitude Coupled Mode?

- Significantly enhanced energy in atmospheric variables at 17 yr

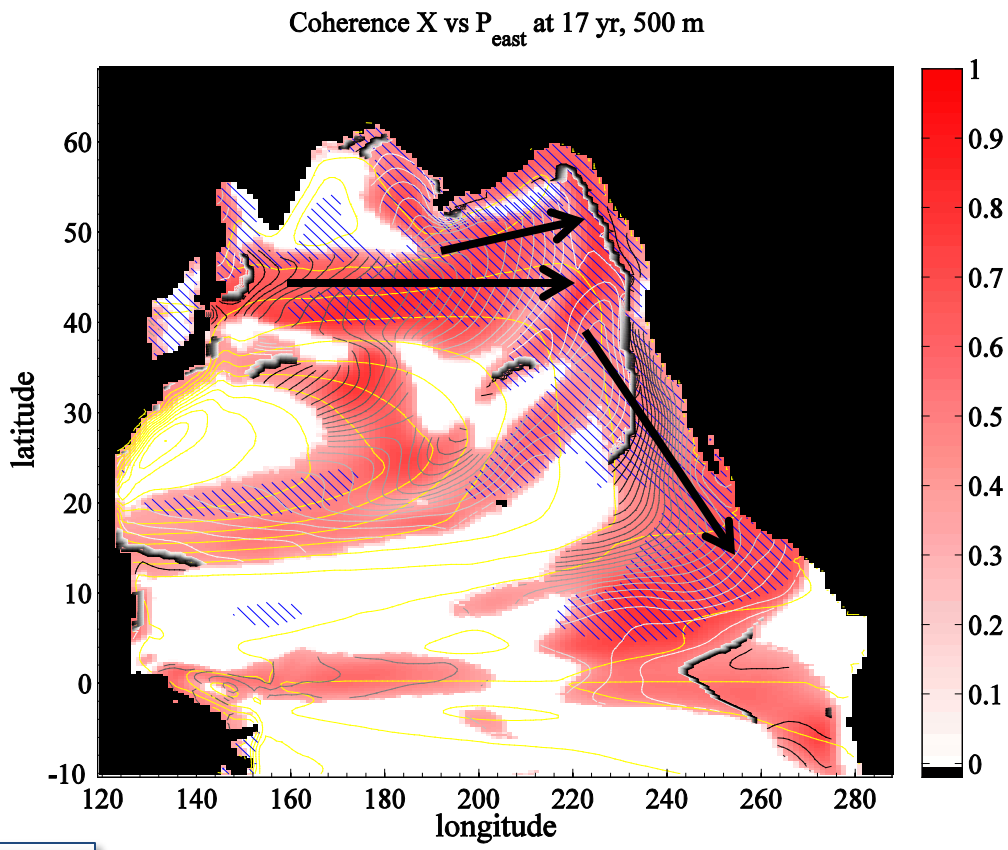




Sea Level Pressure (SLP)

Surface Heat Flux (SHF)

Mid-latitude Coupled Mode?



Spiciness at 500 m

Conclusions

- Distinctive modes of decadal variability in North Pacific climate system in CCSM3
  - Energy on *eastern* boundary
  - 17 and 8.5 yr periods
  - Time scale set by *eastward advection* of T/S anomalies?
    - In contrast to westward Rossby wave propagation