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
Pacific Decadal Variability in CCSM3 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?

Coherence $X$ vs $P_{\text{est}}$ at 17 yr, 500 m

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