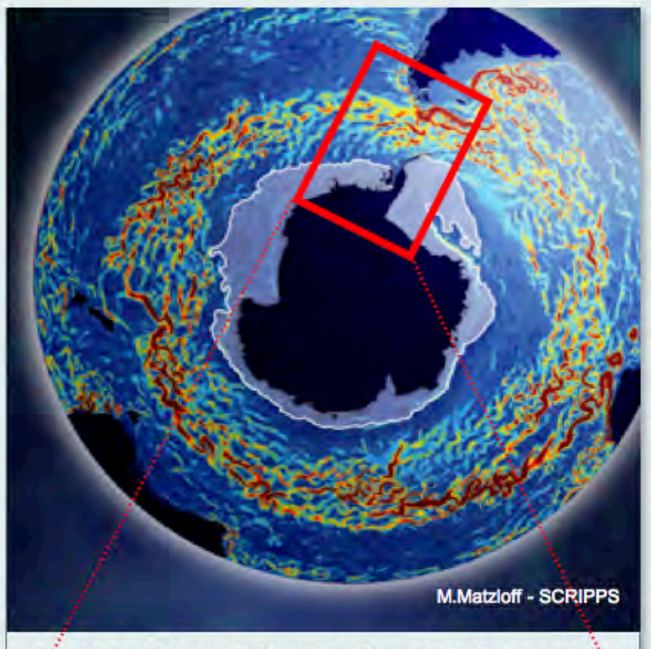
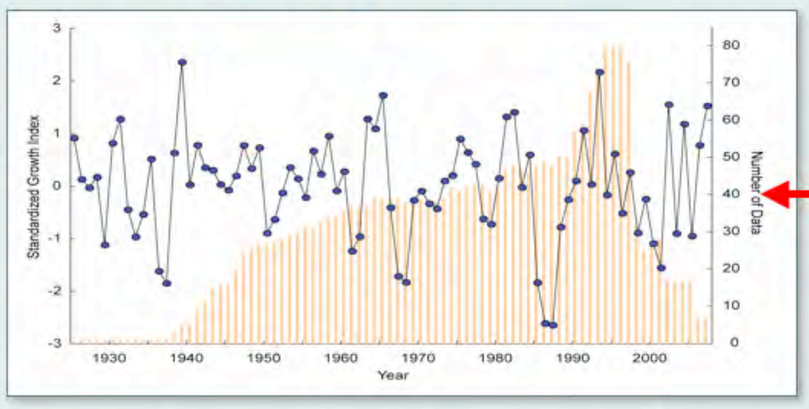
T Brey, G. Lohmann, K. Jenkins,
IY Ahn, B Lomovasky, M Voigt

Does the Antarctic Circumpolar Current isolate high-latitude bivalves from ENSO forcing?



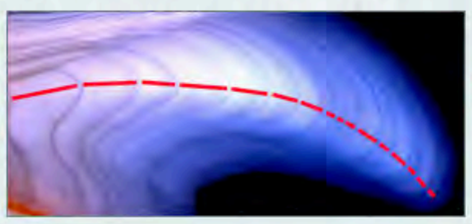
ACC = West Wind Drift. 125 Sverdrup

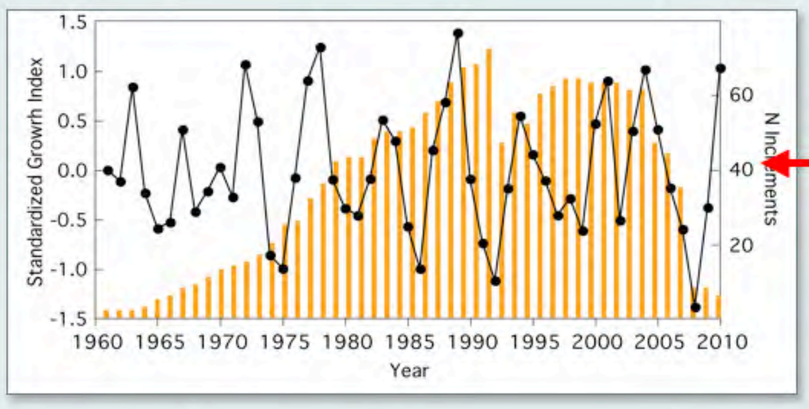
We compare:



Eurhomalea exalbida

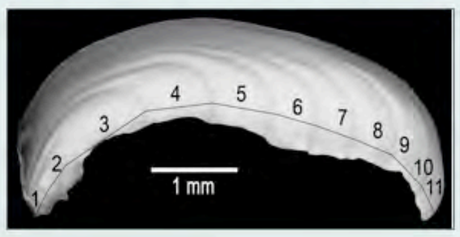
Max age: ± 70y; Growth series 1934 - 2007





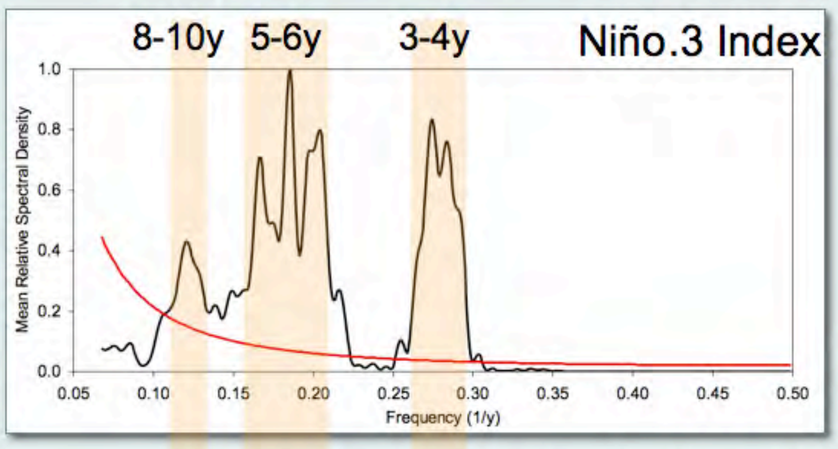
Laternula elliptica

Max age: ± 35y;
Growth series 1961 - 2010

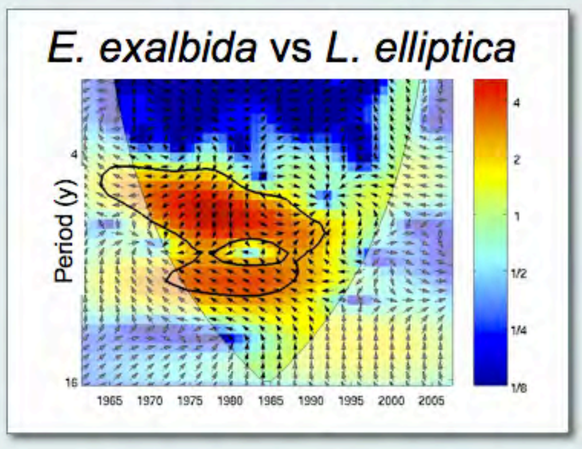


You judge:

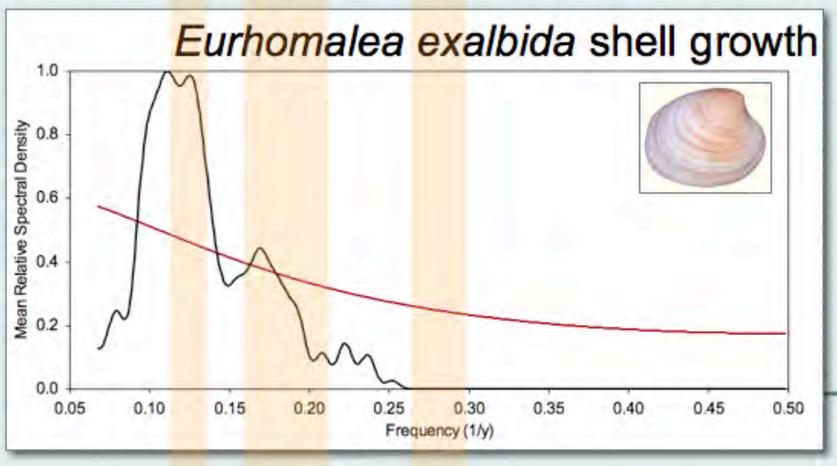
Multi Taper Spectra

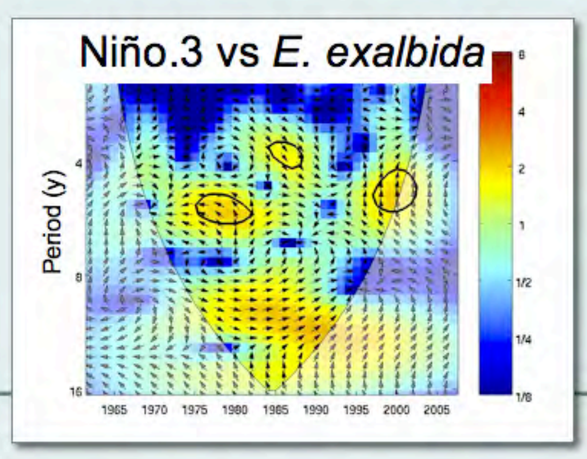


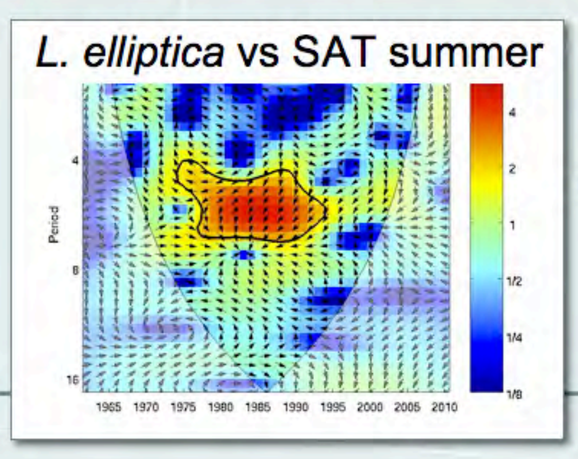
Cross Wavelet Spectra



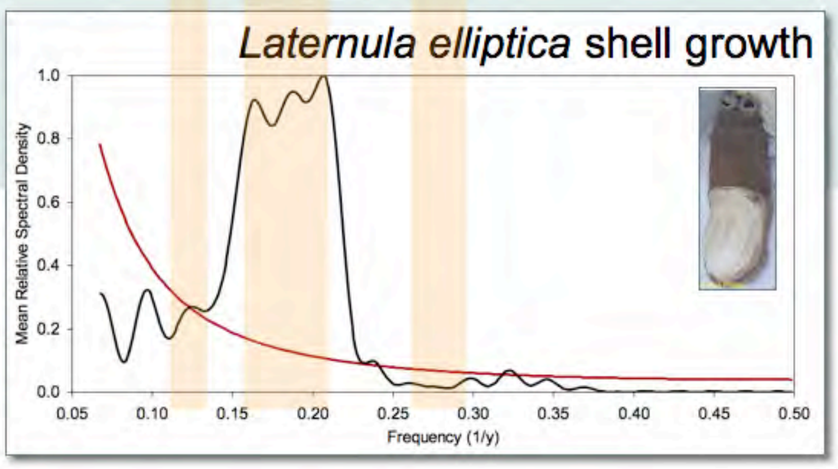
- *L. elliptica* growth is closely coupled to ENSO signal
- ACC ≠ Barrier for ENSO signal
- Likely signal pathways:
  El Niño / La Nina
  - ➔ - / + air temperature
    - ➔ + / - sea ice extent
    - ➔ - / + glacial runoff
      - ➔ overall + shell growth

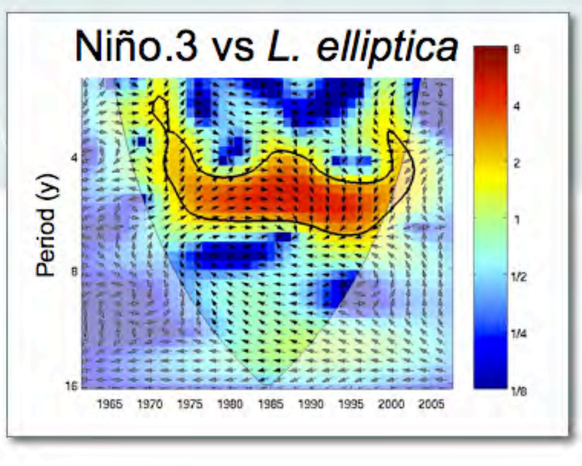


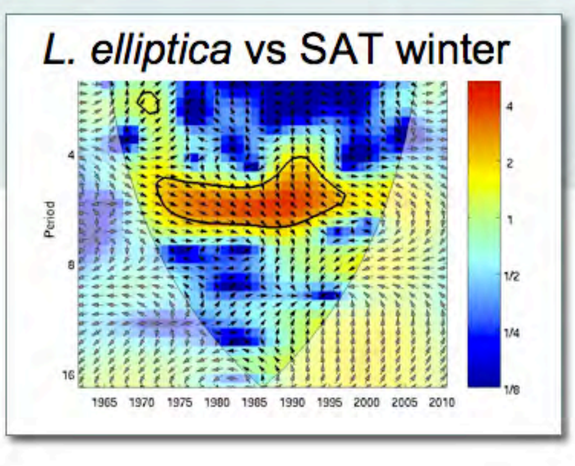




← Out-of phase!







➔ In phase!

Alfred Wegener Institute für Polar and Marine Research - www.awi.de - T Brey: AWI, G. Lohmann: AWI, K. Jenkins: Univ. Chicago, IY Ahn: Korean Ocean R&D Institute, B Lomovasky: Univ. Mar del Plata (Argentina), M Voigt: Univ. Karlruhe (Germany) - 2nd International Sclerochronology Conference, Mainz 2010