



UNIVERSITY
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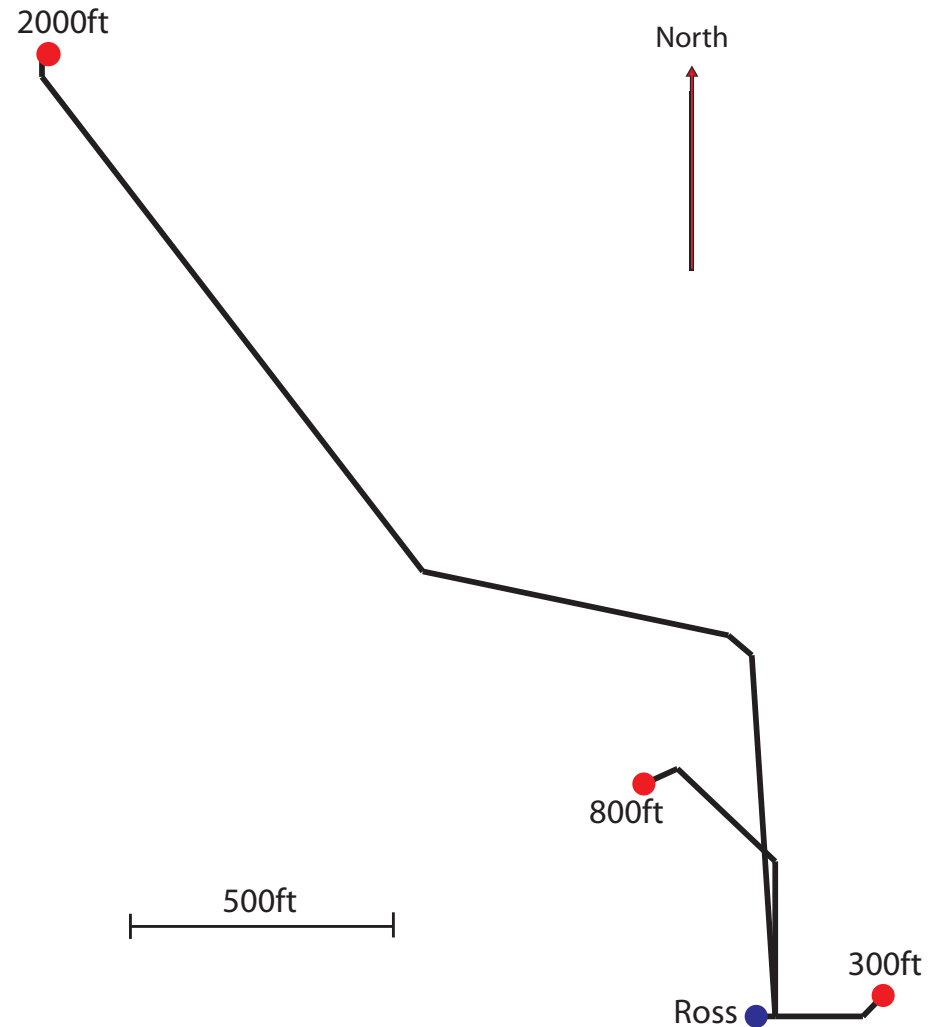
Status Report from Homestake

Jan Harms

University of Minnesota, Twin Cities

March 17th, 2009

1. 300 ft station:
CMG-40T + remote access
2. 800 ft station:
STS-2 + environmental sensors
3. 2000 ft station:
T240 + environmental sensors +
remote access + two prototypes
of horizontal seismometers



Pumps at 4100ft



Mud



Humidity (now 300ft station)



Communication (anno 2007)



Hoist room



Fiber links



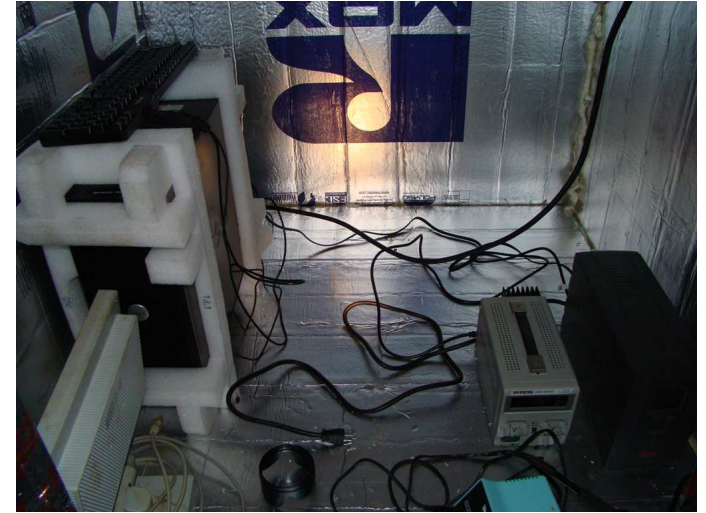
Public transportation



Isolation from air currents (2000ft)



Water shield (800ft)



Publicity



300 ft station



800 ft station



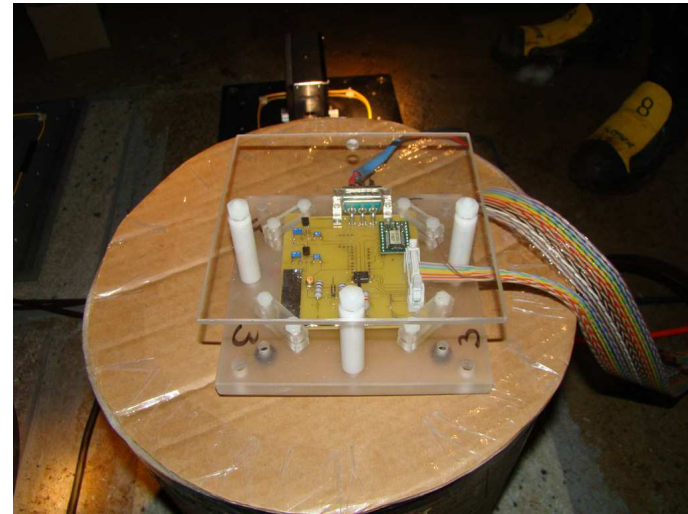
2000 ft station



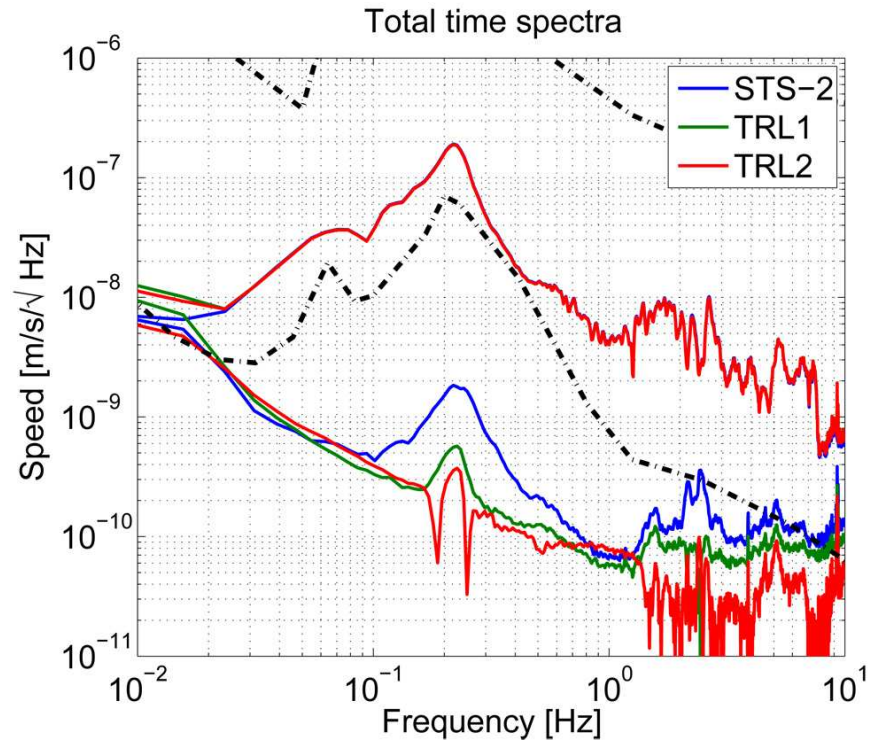
Prototypes at 2000ft



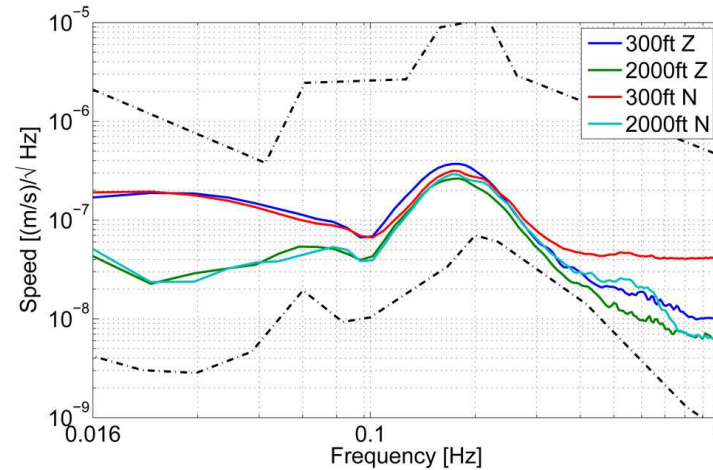
Sensor board at 2000ft



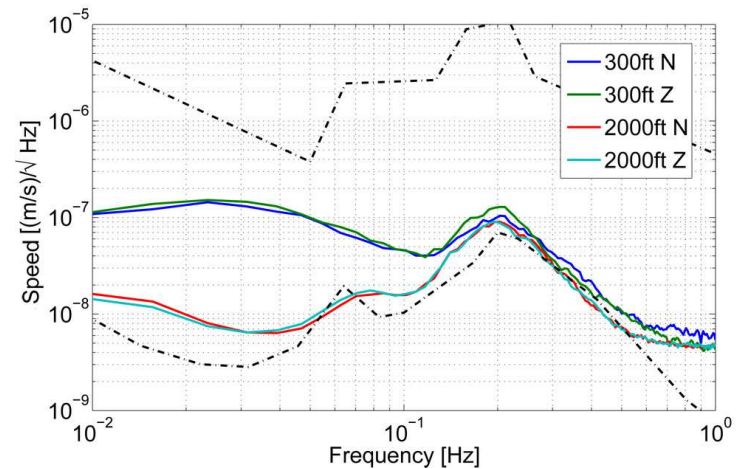
Spectral Densities



Average spectra

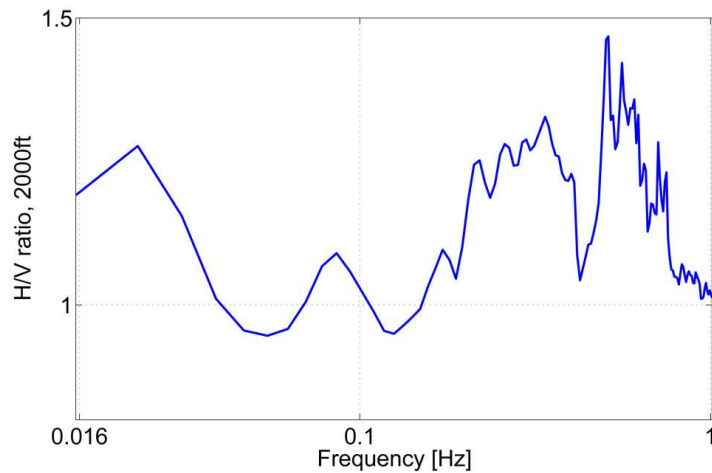
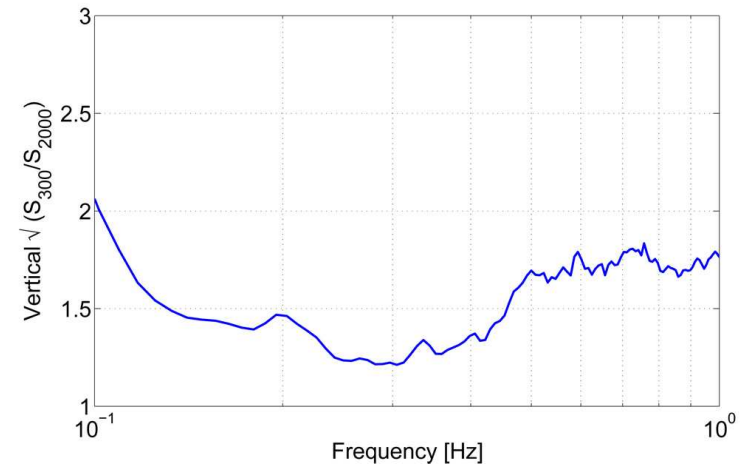
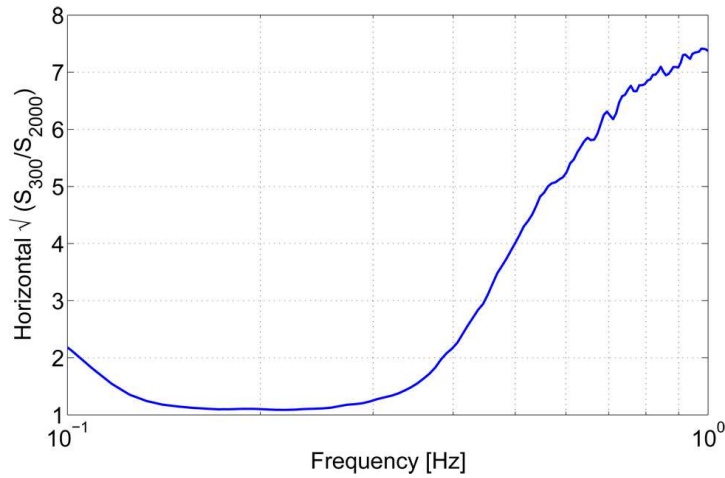


Quiet-time minimum



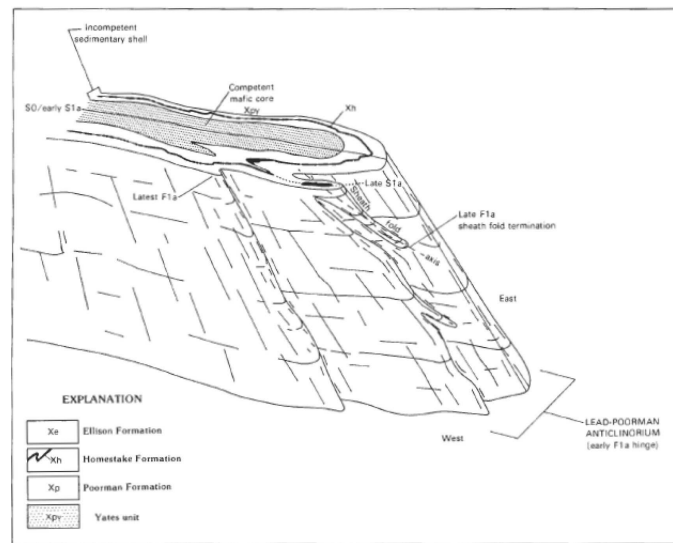
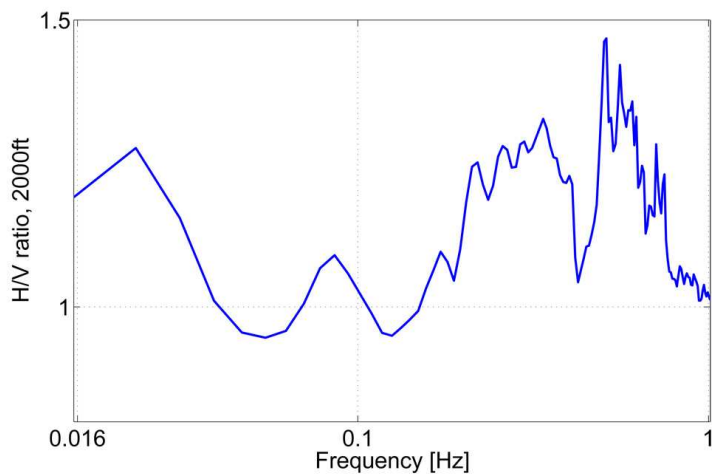
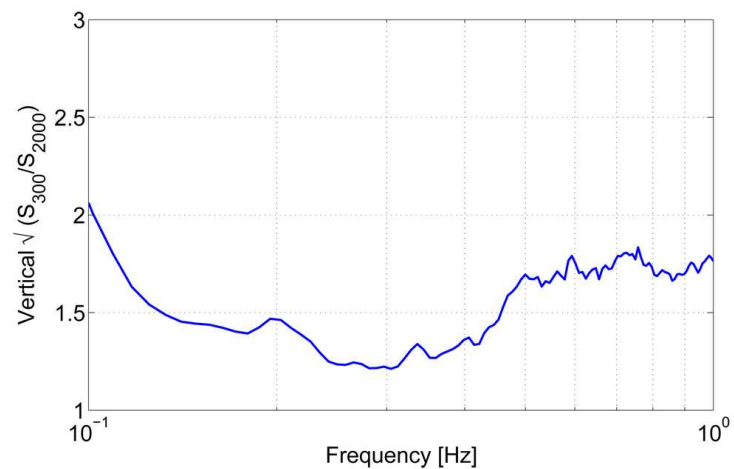
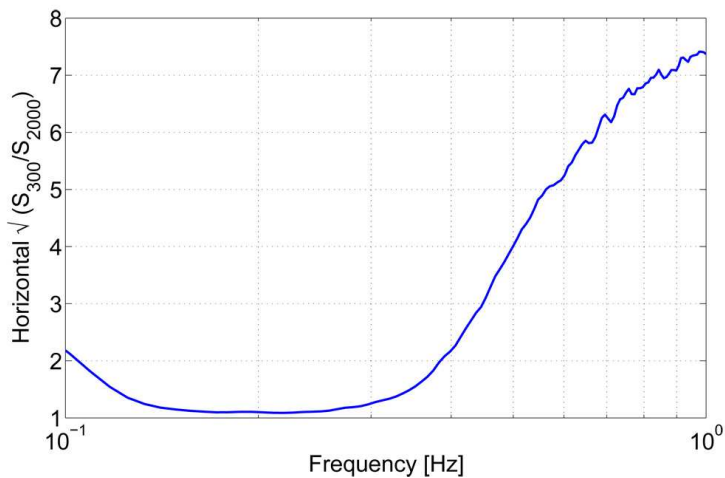
- Tilt noise at 300ft
- Güralp problem below microseisms
- Lead is quiet
- 2000ft level is world-class location

Spectral Ratios



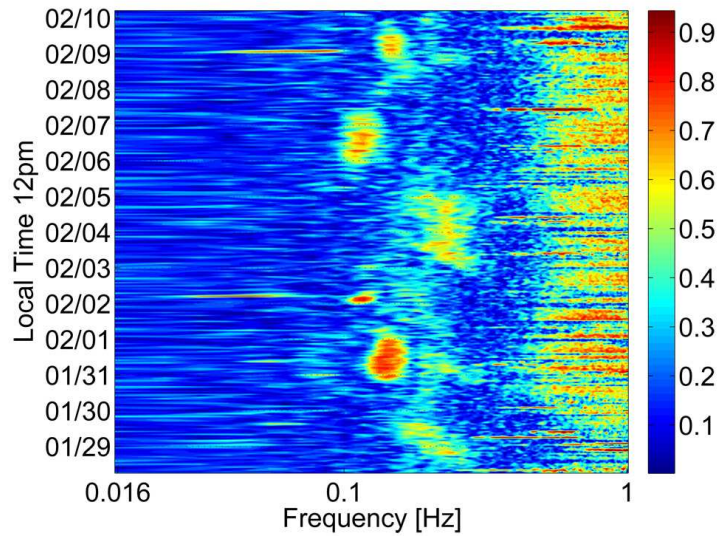
- No microseismic Love waves (probably no Love waves at all)
- Small contribution of Rayleigh waves to surface microseisms
- Resonant modes at 2000ft station?

Spectral Ratios

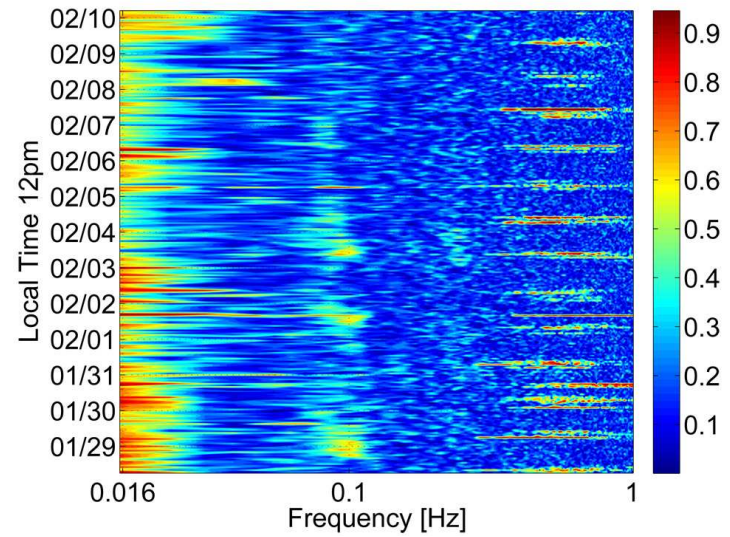


Spectral Degree of Coherence

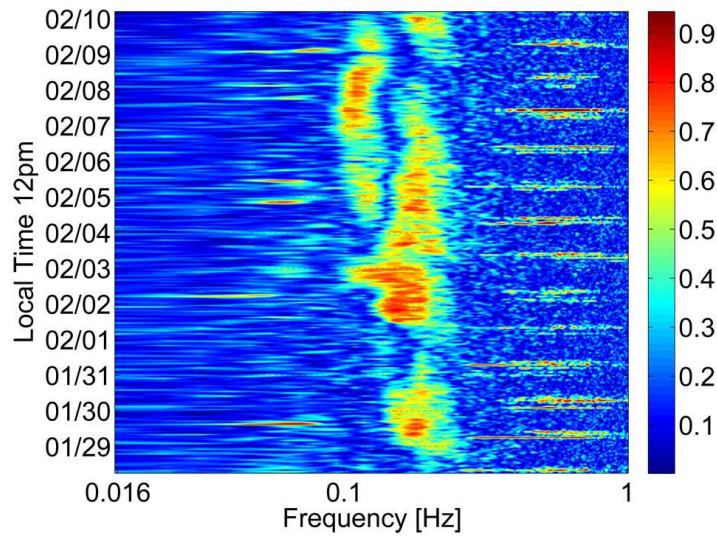
Coherence, North-Vertical 300ft



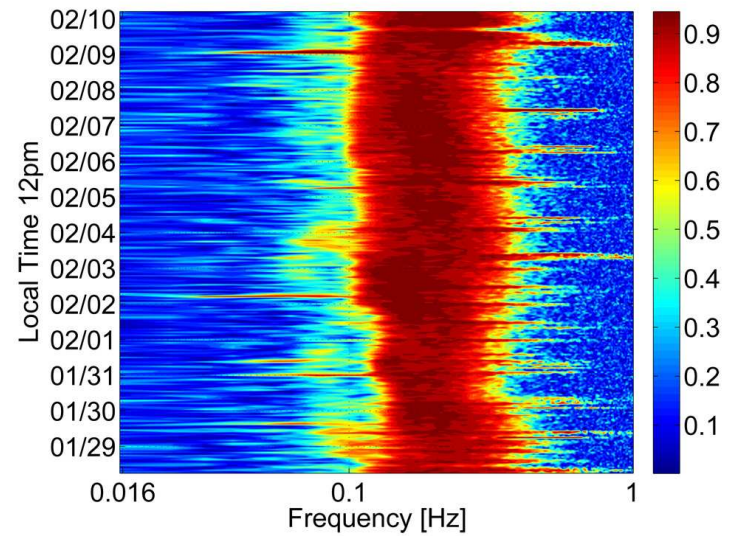
Coherence, North-Vertical 2000ft



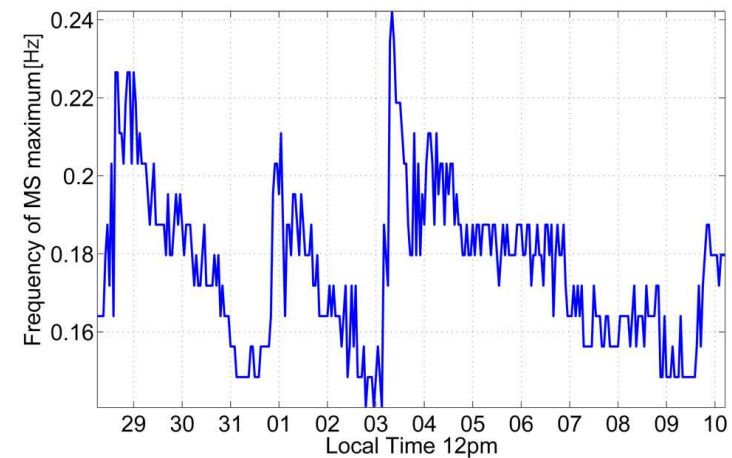
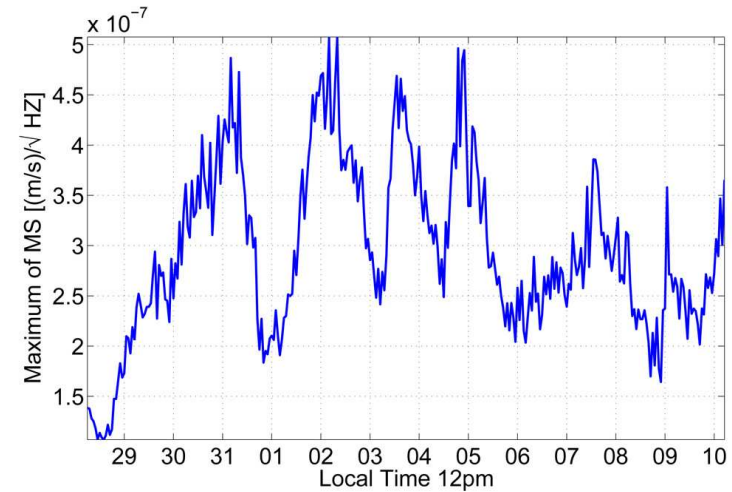
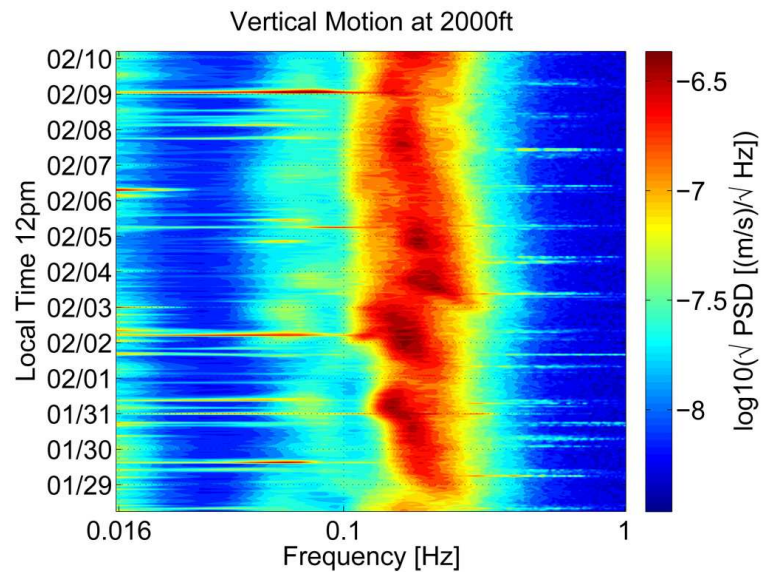
Coherence, Vertical 300ft - 2000ft



Coherence, North 300ft - 2000ft

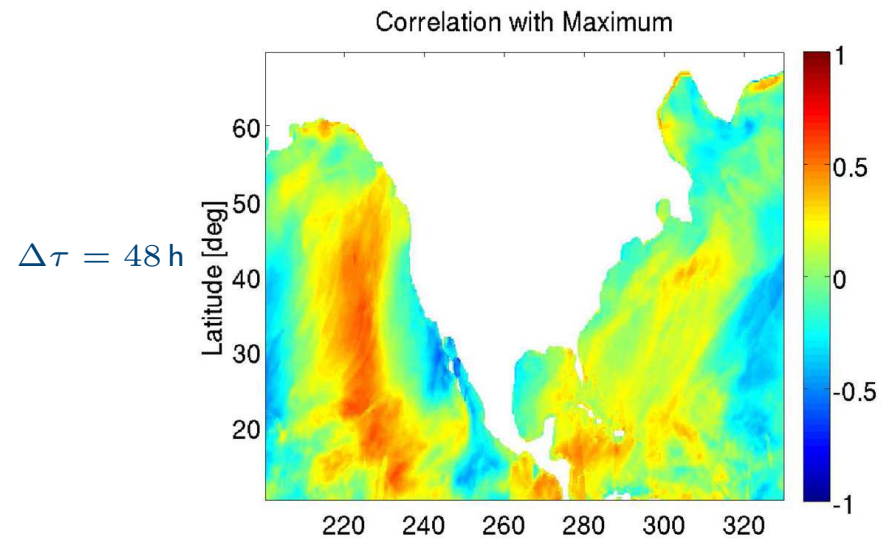
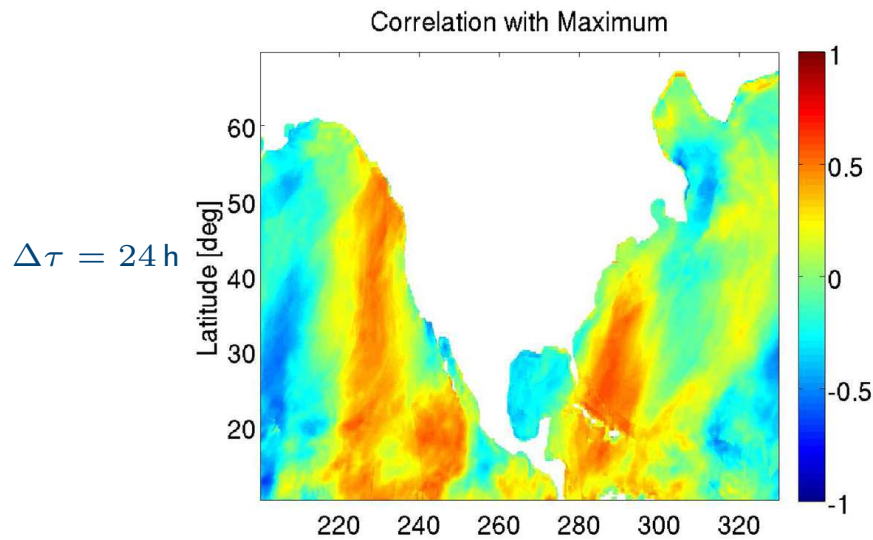
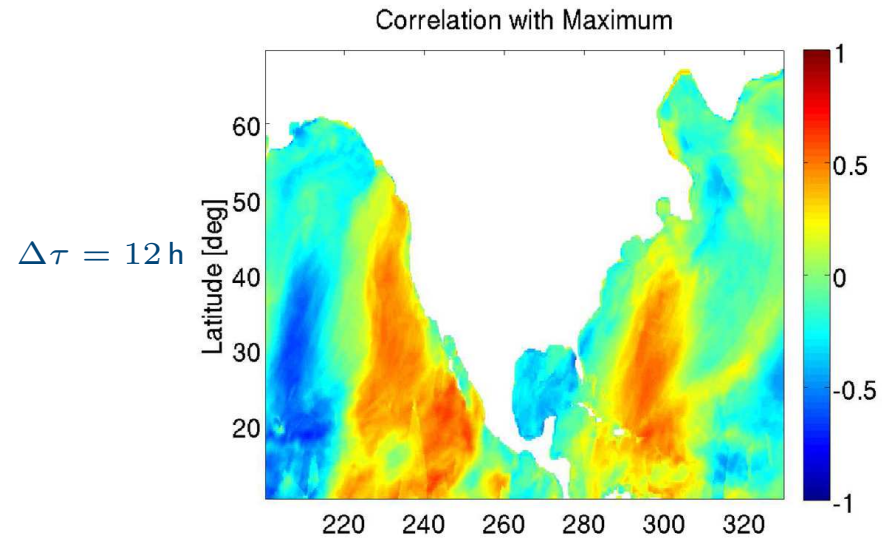
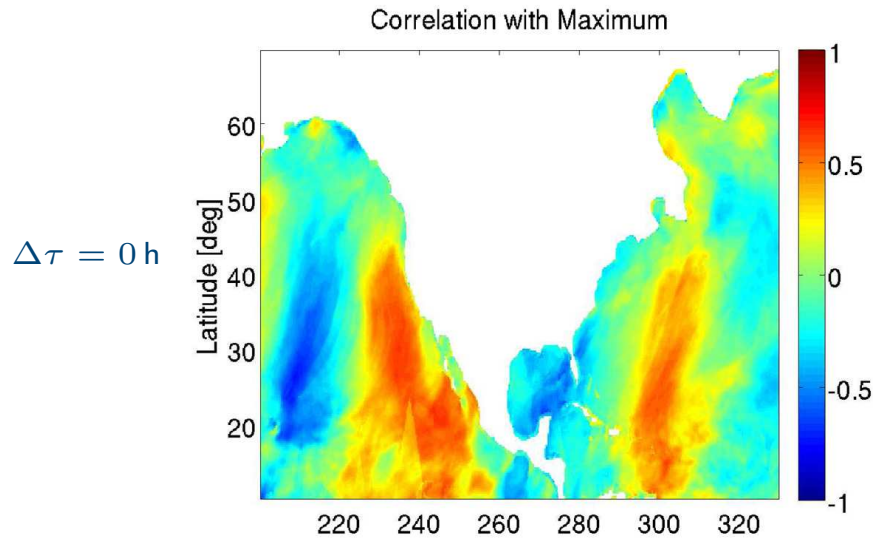


Time Evolution of sMS



- Microseisms change in magnitude and frequency
- Magnitude and frequency evolution uncorrelated
- Correlation with ocean-wind speeds?

Correlation with sMS Peak Value



Correlation with sMS Peak Frequency

