



E3/E4 PEM Correlations, Part I

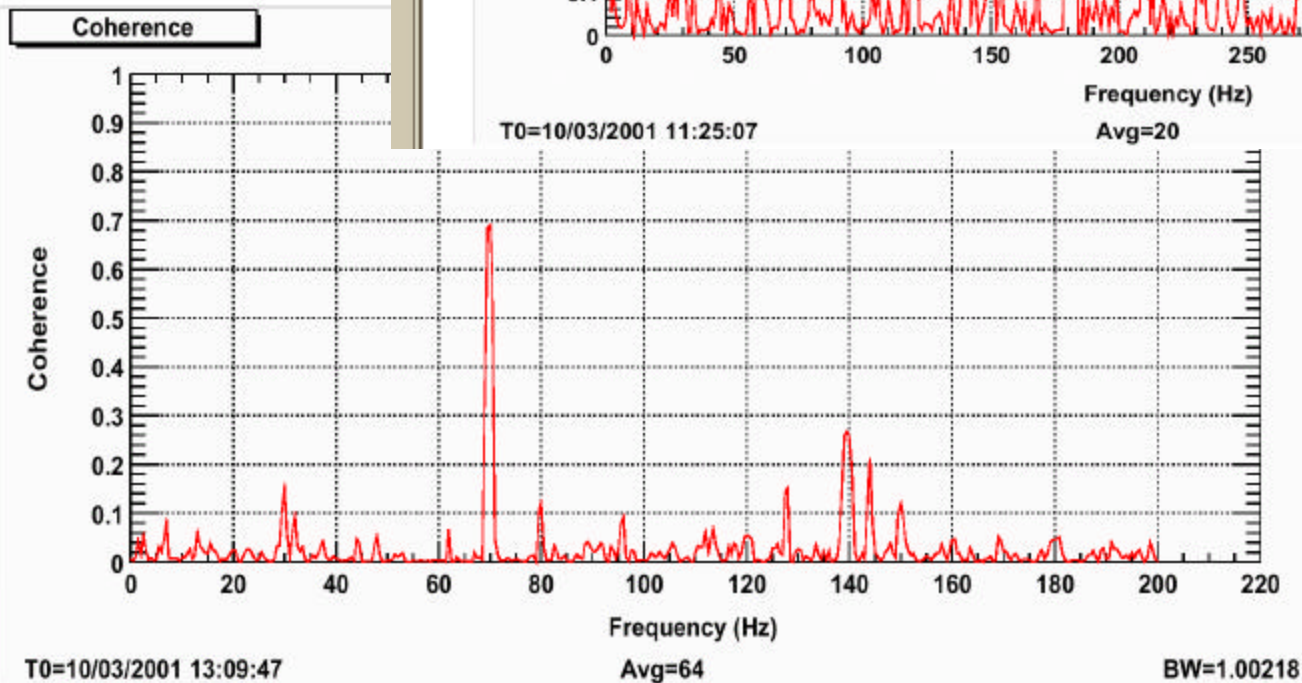
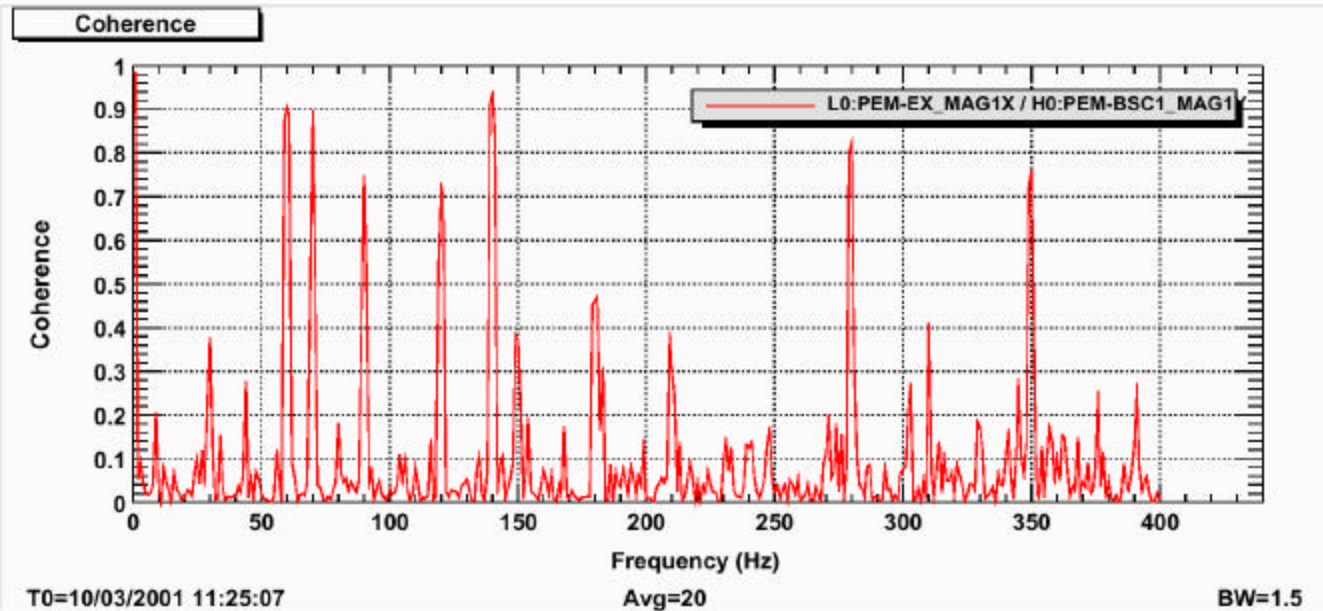
Michael Landry
LIGO Hanford Observatory
Detector Characterization Session

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Magnetometer correlations

- P. Fritschel
- Top plot ~ 40 s
- Bottom plot ~ 120s



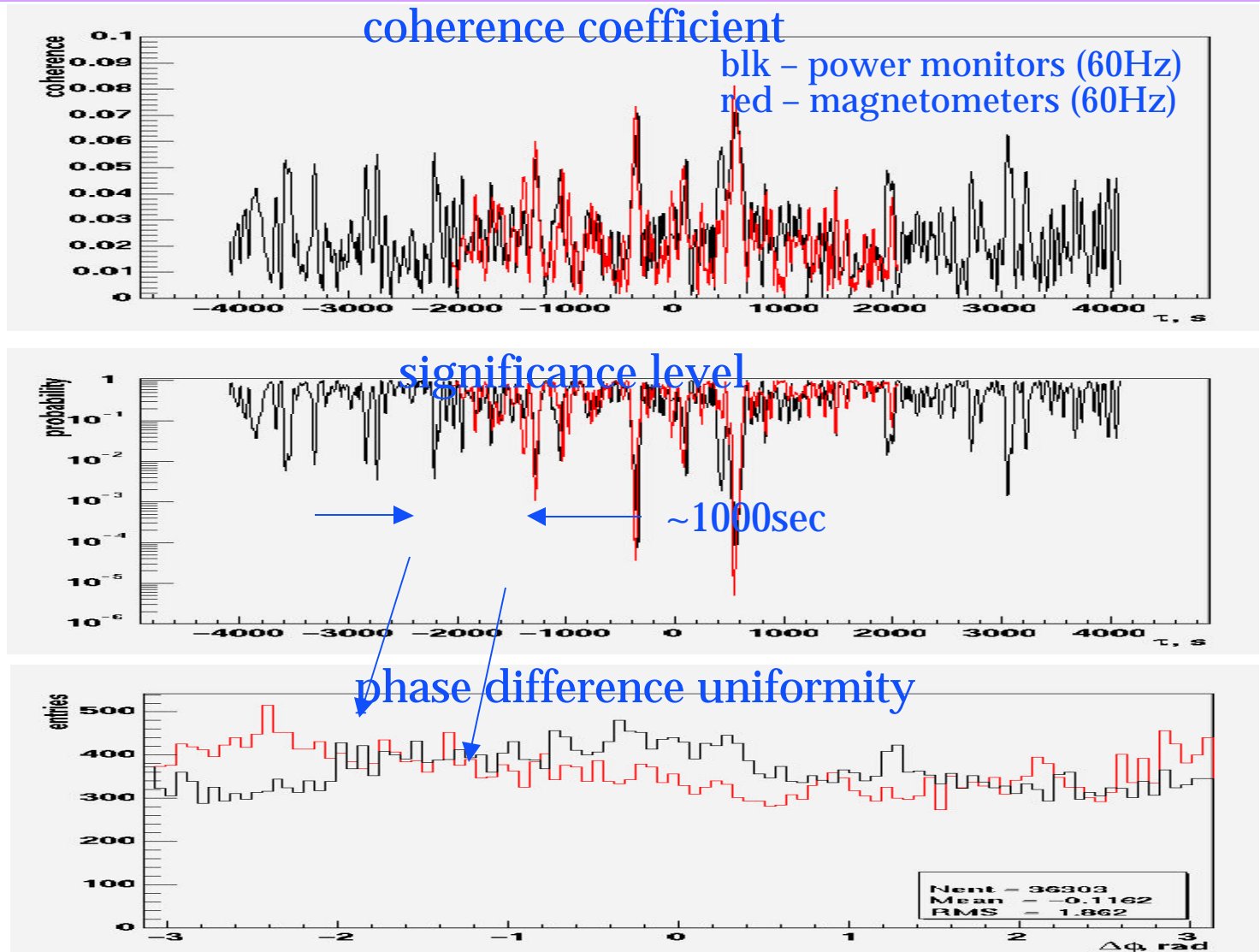
- not ELF
- Gateway vertical refresh rate 69.9Hz
- Not observed in endstation



Coherence & Significance Level

S. Klimenko

- the coherence of signals $s_L(t)$ and $s_H(t+\tau)$, where τ is a time delay between two signals.





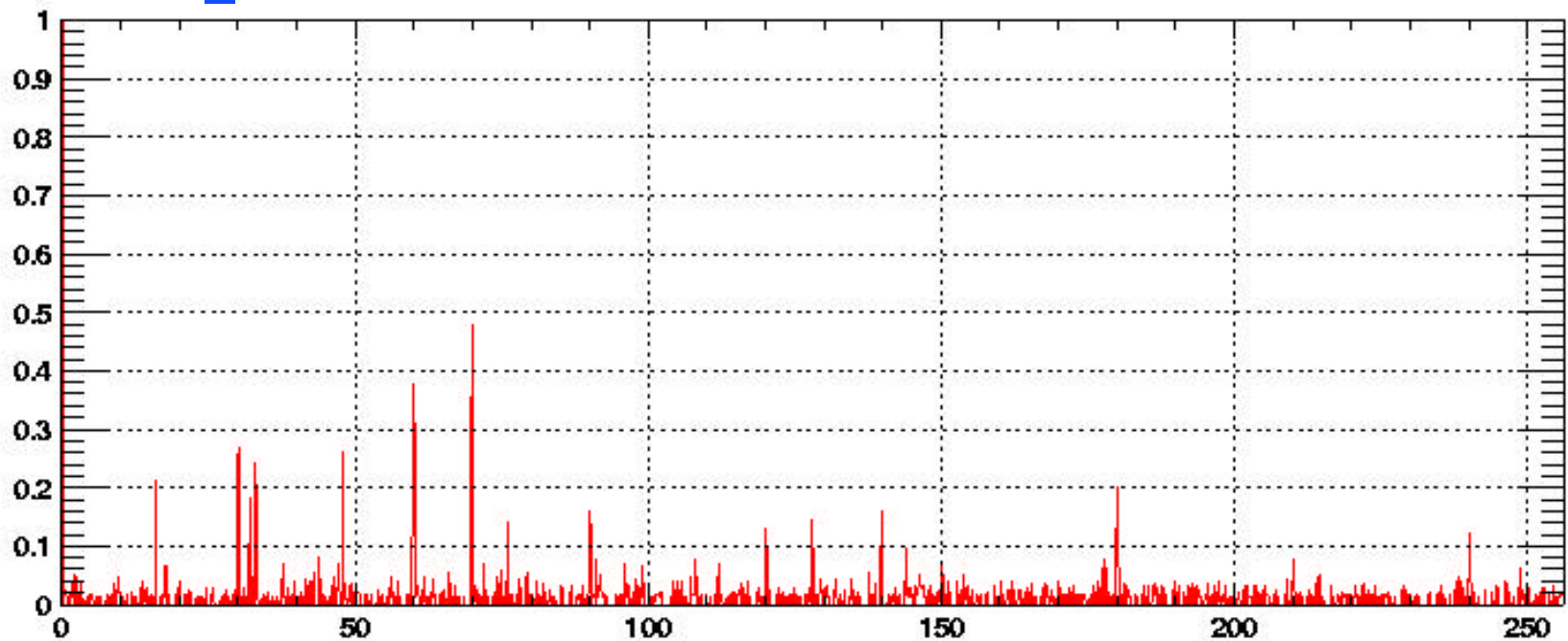
Magnetometer correlations

N. Christensen

Intersite coherence:

H0:PEM-BSC1_MAG1Y

L0:PEM-EX_MAG1X





Summary

- Coherence in power line monitors and fluxgate magnetometers drops on minute timescale
- Some indication of correlation in power line monitors seen on 10h time scales
- 16Hz correlations?
- Gateway vertical refresh rate: 69.9Hz alerts us that good clocks can be coherent on long timescales
- GPS synch is a perfect clock
- More sensitive coil magnetometers available at both sites for entire E5 run – PEM data to be merged soon
- Seismic correlations need to be investigated