Analysis of nonstationarity in LIGO S5 data using the NoiseFloorMon output: proposal for a seismic Data Quality flag.

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DCC #
Just a quick reminder

• Tracking AS_Q and all seismic channels.
• Frequency bands: 0-16, 16-32, 32-64, 64-128 Hz.
• Minute trends of max threshold crossing and cross correlations with the seismic channels stored.

• Offline analysis:
  - looking at trends on a daily basis
  - studying cross correlations with the seismic channels
  - Looks up other monitors for comparison.
Daily update is made (mostly automated/minimal supervision) and can be accessed at:

www.phys.utb.edu/~soma/MNFTresults/NoiseFloorMon_daily.html

Some analysis results/shift summaries can also be found at:

www.lsc-group.phys.uwm.edu/glitch/investigations/s5index.html

People who have been involved at various stages of this work
S. Mukherjee (algorithm and main code); Roberto Grosso (DMT code); R. Stone (present offline analysis).
Analysis and applications

- Analysis of data quality for important times, e.g. contribution to the burst detection checklist:
  
  http://www.phys.utb.edu/~soma/MNFTresults/ctNoiseFloorMon_Sep21_H1_updated.html

  gravity.phys.uwm.edu/cgi-bin/p cvs.cgi/*checkout*/bursts/projects/detection/burstdetectionchecklist-gps874465554.html

- Development of a seismic data quality flag:

  http://www.phys.utb.edu/~soma/MNFTresults/ctNoiseFloorMon_Sep12_H1_updated.html
Seismic data quality flag for S5

- Analysis of entire S5 data for H1, H2 and L1.
- Mark the GPS times of top 10 threshold crossings everyday.
- Insert in the DQ database with relevant frequency and channel information.

**Daily Analysis**
- Seismic correlations
- Daily trend in the GW channel
- Comparison with Q-scan
- Visualizing the data

**Weekly trends** in the GW channel

**Monthly trends** in The GW channel
## Largest Threshold Crossings

09/12/2007

<table>
<thead>
<tr>
<th>#</th>
<th>Site</th>
<th>GPS time</th>
<th>Channels</th>
<th>Frequency Bands(Hz)</th>
<th>Q-Scans</th>
<th>Comments</th>
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<tbody>
<tr>
<td>1</td>
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<td>Qscan</td>
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<td>Qscan</td>
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