



---

# Summary of Detector Characterization Sessions

Keith Riles  
(University of Michigan)

# Overview

---

## Much activity since March meeting:

- **New, improved DMT monitors / infrastructure (see table)**
- **Other software packages improved or under development helpful to detchar analysis:**
  - » **LIGOTools (P. Shawhan)**
  - » **Lidax (D. Sigg)**
  - » **Event Tool (D. Sigg)**
  - » **Web storage / retrieval of reference spectra (S. Marka)**

# DMT Monitors (status in E5)

DMT Monitors	Scientists	Log File Output	Trend Frame Output	Database Triggers Generated	Run by Process Manager	DMT Viewer Interface	Real-time HTML Summary	Histogram Display (avail Aug)
Line Noise	B. Allen, A. Ottewill E. Daw, S. Klimenko	Yes Yes	Yes Yes	Yes	Yes	Yes Yes		
Seismic Noise	E. Daw	Yes	Yes		Yes	Yes		
Correlations	B. Allen, A. Ottewill	Yes		Yes		Stand-alone		
Bilin. Couplings	S. Penn	Yes			Yes	Stand-alone		
Band-lim. RMS	E. Daw	Yes	Yes		Yes	Yes		
Non-Gauss. Noise	L.S. Finn, G. Gonzalez, & P. Sutton	Yes				Yes + GUI		
Power Spect. Trans.	S. Mohanty							
Servo Monitor	D. Chin, K. Riles	Yes		Yes	Yes	Yes		
Event Catalog	J. Sylvestre	Yes			Yes	(GUI)	Yes	
Glitches	M. Ito	Yes		Yes	Yes	Yes		Yes
Mag Field Trans	R. Frey, R. Rahkola	Yes			Yes			
Earthquakes	R. Frey, R. Rahkola	Yes		Yes	Yes		(Yes)	
Lock Transitions	D. Chin, K. Riles	Yes		Yes	Yes	Yes	Yes	
Power Mains	D. Sigg	Yes	Yes		Yes	Yes	Yes	
GPS Time Ramp	S. Marka	Yes	Yes		Yes	Yes		
PSL Glitches	R. Savage, J. Zweizig	Yes		Yes	Yes			
Bit Checking	J. Zweizig	Yes		Yes	Yes	Yes	Yes	
Slice Checking	J. Zweizig	Yes		Yes	Yes		(Yes)	
Frame Checking	J. Zweizig	Yes		Yes	Yes			

DMT Infrastructure	Scientists	Online Code	Integrated
Oper. State Conds.	D. Chin, K. Riles	Yes	Yes
Time-Freq Plots	S. Mohanty J. Sylvestre P. Sutton	Yes Yes Yes	Yes
Wavelet Tools	S. Klimenko	Yes	Yes
IIR Filters	E. Daw	Yes	Yes
Histograms	M. Ito	Yes	Yes

(Red = New since March 2001)

# Overview

---

- **E3/E4 investigators reported at this meeting**  
(see below)
- **E5 investigations underway**  
(some early reports at this meeting)
- **Upper Limits analysis groups now contributing to detector characterization**

# Overview

But we still have plenty to do...

- Many DMT monitors need considerable work:
  - » Refinement (config tuning, informative & standardized output)
  - » Accessible, clear documentation (e.g., in the DCC)
  - » Evaluation (U.L. groups help critical in this)
    - > Improvement of monitors
    - > Pruning(?)
- Manpower thin in some En investigations
  - » Again, U.L. help welcome!
  - » No need to wait for mock data!

# Other Issues

- Now hashing out mechanics of making database info from DMT monitors available and useful to downstream astrophysical analysis
- As always, need more people at sites, between and during engineering runs
  - > E5 turnout disappointing (barely filled shifts)

# Manning En Shifts

- Need to continue training shift scientists for S1,S2,...  
(not many new faces at E5)
- Next year: Equitable shift allocation scheme needed  
(High-energy model:  
#shifts/group proportional to #authors/group)
- Should become proficient sooner rather than later  
-> Screwdriver not required! (Usually)

# Manning En Shifts

Also, keep in mind...

- Upper limits run data not likely to be white, Gaussian, or stationary (especially for last IFO on line)
- Being on hand will give you better understanding of data idiosyncrasies
  - > Less likely to chase red herrings offline



# Presentations in DC Sessions

---

- 27 Presentations(!)
  - » Software tools development
  - » Engineering run investigations
  - » Seismic noise at Livingston
- Can't begin to do justice to these in brief summary
- Agenda