

# **Status of Software by U. Oregon– suspensionMon & GRB notification**

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- ❑ suspensionMon is a DMT monitor
  - Began after S1 'heartbeat' incident on H1:SUS-ETMX\_SENSOR\_SIDE
  - First monitor to 'beta-test' chInterface (see G020349-00-Z)
- ❑ Currently functioning with log files & triggers
  - Looks at \_SENSOR\_SIDE channels for large optics
  - Running with triggers since E10 (fixed a bug at the start of S3)
- ❑ Future additional features:
  - Minute trends (both online & offline access)
  - Alarms on DMT Alarm webpage
  - Monitor additional suspension channels (e.g. coils which are actuated during lock & acquisition)

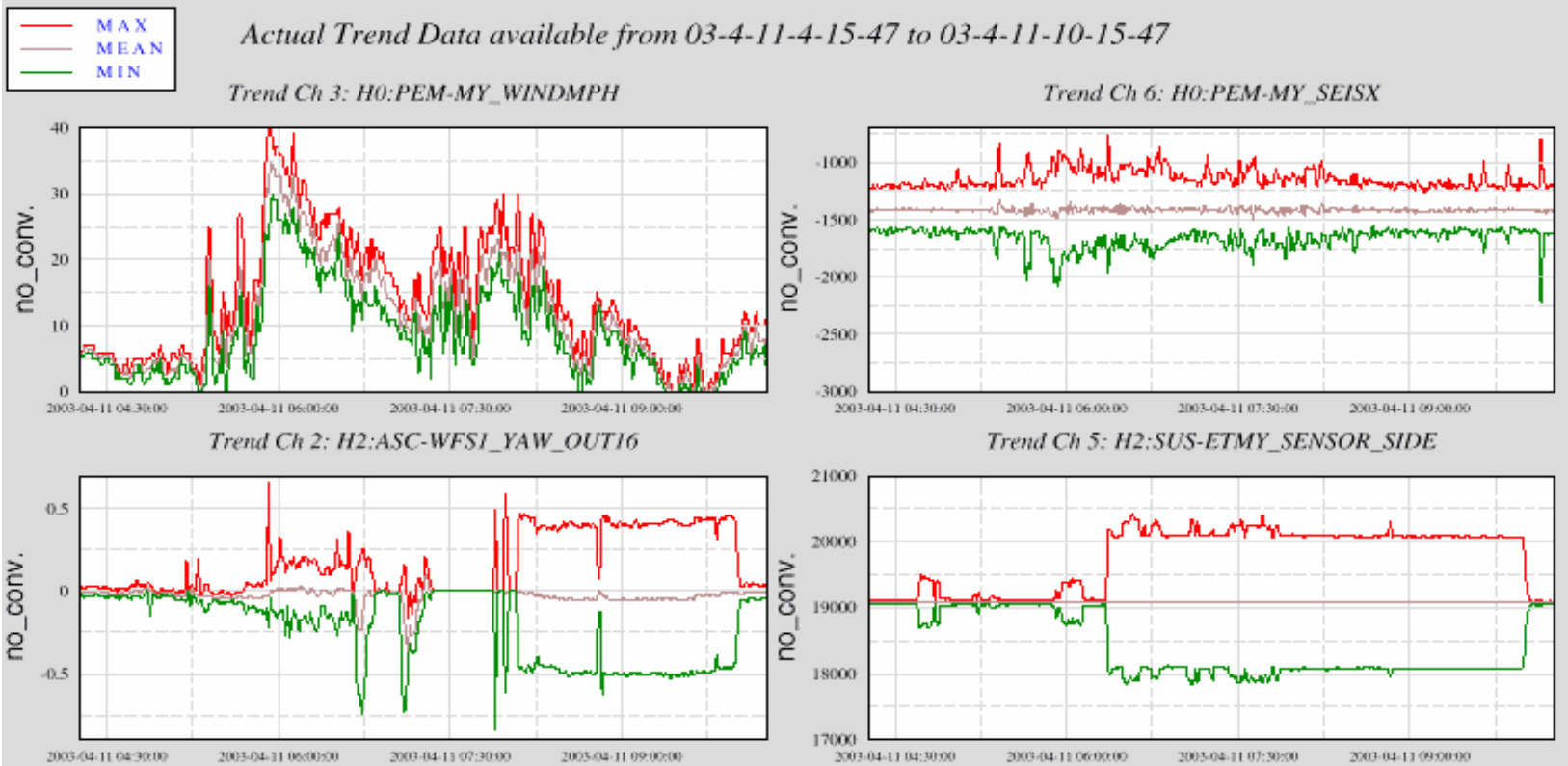
## Detection Issue

- ❑ Need to detect ring-ups in suspensions
- ❑ Usually for science mode, but also need to monitor out-of-lock state
- ❑ Should not be confused with lock acquisition process

## What suspensionMon Does

- ❑ Thresholds on suspension channels in susceptible band (.2-20Hz)
- ❑ Maintains short-term (science mode) and long-term (out-of-lock) thresholds
- ❑ OSC condition on lock-acquisition & transition states

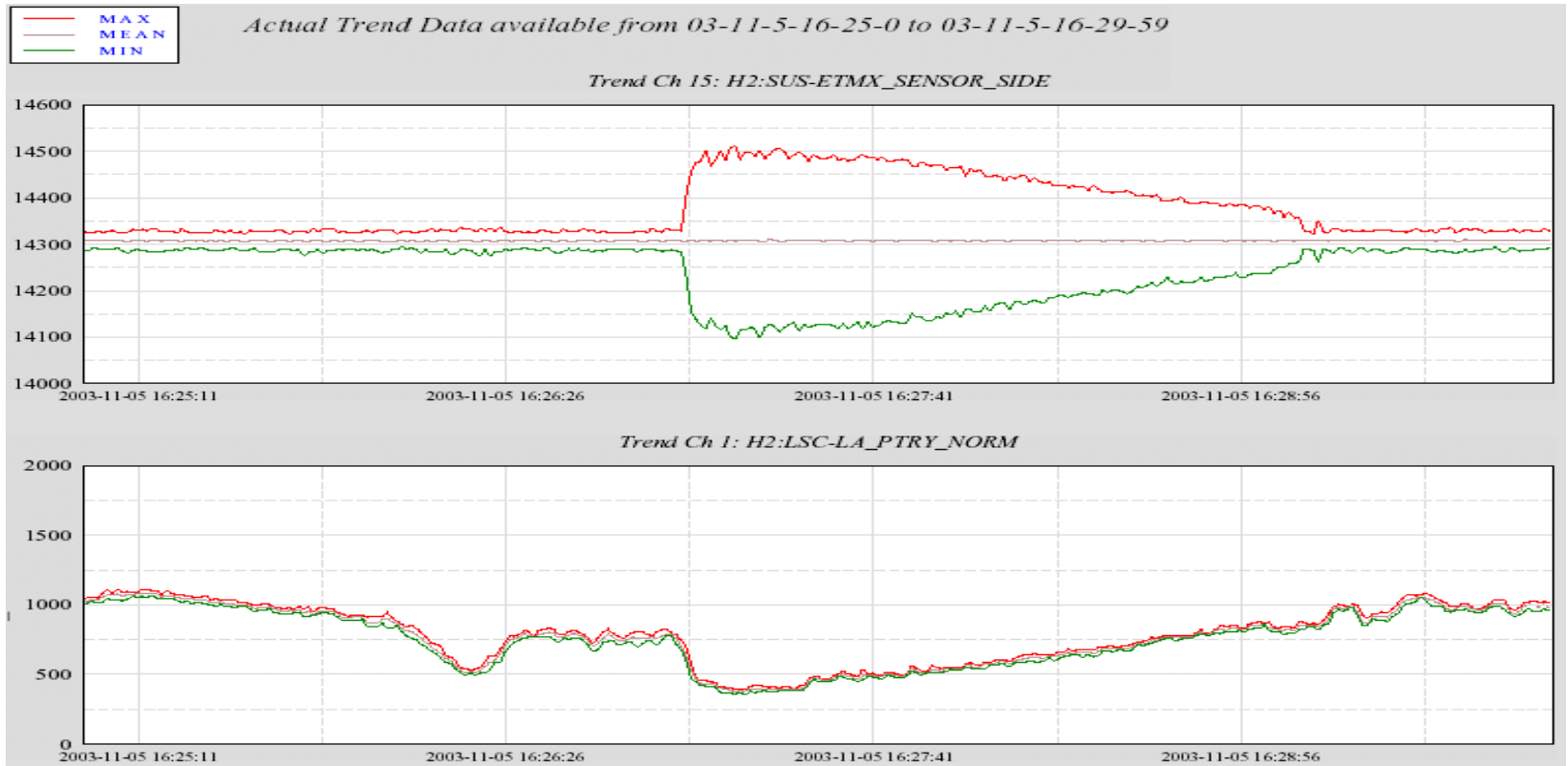
# suspensionMon: Example (S2 data)



(see hugh's LHO e-log entry 4/11/2003)

- ❑ Excess power in 10-20Hz band
- ❑ Possibly initiated by earthquake and/or wind

# suspensionMon: Example (S3 data)



- ❑ Excess power in high-frequency regime (>3000Hz)
- ❑ Not detected by suspensionMon!

# Operator Notification of GRBs: Overview

- Need a cooperative effort between Triggered Burst Search and control room operations
  - To ensure that enough data is collected after GRB events
  - Example: GRB030329 (LLO off-line, giving LHO operators an opportunity to drop science mode for maintenance)
- Provide near-real-time notification of GRB events in exchange for continued/extended science-mode operation
  - Triggered Burst Search receives near-real-time notices from GCN (<http://gcn.gsfc.nasa.gov/>), about 0 – 3 per day
  - “Near-real-time” → anywhere from 0 – 30 minutes
- Should be extendable to other event types in the future.

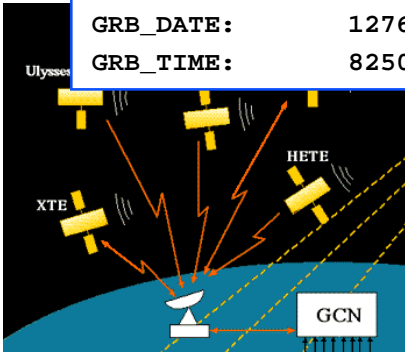
# Operator Notification of GRBs: How It Works

- ❑ Part of GRB-event parsing Perl script
  - Script sends GRB notice information into LDAS database
  - Can filter out test emails for “old” information
- ❑ Sends notification to sites over TCP/IP
  - Servers running at LHO – red; LLO – london
  - Perl/Tk script which listens on a pre-defined socket
  - Server sends acknowledgment response
- ❑ Triggers EPICS alarm in control room
  - Gives time remaining for data-collection period
  - Records in log file
- ❑ Operator acknowledges alarm
  - Alarm reset automatically

# Operator Notification of GRBs: Pipeline

```

Date: Thu, 8 May 2003 18:55:58 -0400
From: Bacodine <vxw@capella.gsfc.nasa.gov>
To: sn@ligo.caltech.edu
Subject: GCN/HETE_POSITION
TITLE:          GCN/HETE BURST POSITION NOTICE
NOTICE_DATE:    Thu 08 May 03 22:55:45 UT
NOTICE_TYPE:    HETE S/C_Alert
TRIGGER_NUM:    2705,   Seq_Num: 1
GRB_DATE:       12767 TJD;   128 DOY;   03/05/08
GRB_TIME:       82509.54 SOD {22:55:09.54} UT
    
```



```

event_type
event_start
"stand down" time
    
```

[acrux.ligo.caltech.edu](mailto:acrux.ligo.caltech.edu)

(email handling / parsing)

- Check event time with current time
- Scrap test emails, emails which arrive too late, etc.

TCP/IP

london (LLO server)

TCP/IP

red (LHO server)

- Get event timestamps, type
- Set EPICS records
- Trigger EPICS alarm
- Write event to log file (continuously running)

