

# SuspensionMon in S4

from R. Rahkola

- Thresholds were modified, based on RMS amplitudes in E12
- Trigger rates in S4 were low, typically  $\text{few} \times 10^{-4}$  Hz
  - Most triggers associated with start/stop effects

## Total triggers since start of S4:

H1 -	total	260	(1E-4 Hz)
	long	259	
	short	1	
H2 -	total	895	(3E-4 Hz)
	long	802	
	short	93	
L1 -	total	1093	(5E-4 Hz)
	long	1093	
	short	0	

==== Short Triggers (IFO, interval, optic [-event?]) ====

H2	Feb 23 2005 12:31:42 UTC -- Feb 23 2005 12:32:42 UTC	MC2 -
H2	Feb 23 2005 12:43:42 UTC -- Feb 23 2005 12:44:42 UTC	MC2 -
H2	Feb 24 2005 05:06:30 UTC -- Feb 24 2005 05:07:30 UTC	MC2 -
H2	Feb 25 2005 00:59:50 UTC -- Feb 25 2005 01:00:50 UTC	MC2 -
H2	Feb 25 2005 02:31:50 UTC -- Feb 25 2005 02:32:50 UTC	MC2 -
H2	Feb 25 2005 08:28:51 UTC -- Feb 25 2005 08:29:51 UTC	MC2 -
H2	Feb 25 2005 12:38:51 UTC -- Feb 25 2005 12:39:51 UTC	MC2 -
H2	Feb 25 2005 20:02:53 UTC -- Feb 25 2005 20:03:53 UTC	MC2 -
H2	Feb 26 2005 20:42:02 UTC -- Feb 26 2005 20:43:02 UTC	MC2 -
H2	Mar 01 2005 12:31:10 UTC -- Mar 01 2005 12:32:10 UTC	MC2 -
H2	Mar 03 2005 12:32:50 UTC -- Mar 03 2005 12:33:50 UTC	MC2 -
H2	Mar 04 2005 08:39:51 UTC -- Mar 04 2005 08:40:51 UTC	MC2 -
H2	Mar 04 2005 13:38:53 UTC -- Mar 04 2005 13:39:53 UTC	MC2 -
H2	Mar 05 2005 13:13:00 UTC -- Mar 05 2005 13:14:00 UTC	MC2 -
H2	Mar 05 2005 23:17:01 UTC -- Mar 05 2005 23:18:01 UTC	MC2 -
H2	Mar 06 2005 05:30:01 UTC -- Mar 06 2005 05:31:01 UTC	BS,ETMs,ITMs,FMs,RM -
H2	Mar 06 2005 13:21:08 UTC -- Mar 06 2005 13:22:08 UTC	all optics -
H2	Mar 06 2005 21:05:09 UTC -- Mar 06 2005 21:05:09 UTC	MC2 -
H2	Mar 07 2005 02:36:11 UTC -- Mar 07 2005 02:37:11 UTC	nearly all optics -
H2	Mar 08 2005 11:18:43 UTC -- Mar 08 2005 11:19:43 UTC	MC2 -
H2	Mar 09 2005 00:09:03 UTC -- Mar 09 2005 00:10:03 UTC	MC2 -
H2	Mar 09 2005 01:51:03 UTC -- Mar 09 2005 01:52:03 UTC	MC2 -
H2	Mar 13 2005 21:36:07 UTC -- Mar 13 2005 21:36:07 UTC	MC2 -
H2	Mar 15 2005 00:22:53 UTC -- Mar 15 2005 00:22:53 UTC	MC2 -
H2	Mar 15 2005 20:24:02 UTC -- Mar 15 2005 20:24:02 UTC	corner optics (both raw and bandpassed) -
H2	Mar 16 2005 13:34:09 UTC -- Mar 16 2005 13:35:09 UTC	MC2 -
H2	Mar 17 2005 23:34:14 UTC -- Mar 17 2005 23:35:14 UTC	MC2 -
H2	Mar 18 2005 07:24:59 UTC -- Mar 18 2005 07:25:59 UTC	MC2 -
H2	Mar 19 2005 17:45:49 UTC -- Mar 19 2005 17:46:49 UTC	MC2,RM -
H2	Mar 20 2005 02:05:15 UTC -- Mar 20 2005 02:06:15 UTC	MC2 -
H2	Mar 20 2005 02:21:52 UTC -- Mar 20 2005 02:22:52 UTC	MC2 -
H2	Mar 20 2005 03:34:51 UTC -- Mar 20 2005 03:35:51 UTC	MC2 -
H2	Mar 20 2005 11:08:38 UTC -- Mar 20 2005 11:09:38 UTC	MC2 -
H1	Mar 20 2005 14:33:37 UTC -- Mar 20 2005 14:34:37 UTC	MC3 -

==== Long Triggers (IFO, interval, optic [-event?]) ====

L1	Feb 23 2005 01:47:35 UTC -- Feb 23 2005 01:59:35 UTC	ITMY -
L1	Feb 24 2005 20:57:34 UTC -- Feb 24 2005 21:10:34 UTC	all optics – start of monitor
L1	Feb 24 2005 21:43:34 UTC -- Feb 24 2005 22:05:34 UTC	ITMs,BS – power outage aftermath
L1	Feb 24 2005 22:39:34 UTC -- Feb 24 2005 22:54:34 UTC	corner optics – power outage aftermath
L1	Feb 25 2005 01:34:34 UTC -- Feb 25 2005 02:06:34 UTC	BS -
L1	Feb 26 2005 14:27:34 UTC -- Feb 26 2005 14:44:34 UTC	MC1,RM,BS,ITMX -
L1	Feb 26 2005 17:08:34 UTC -- Feb 26 2005 17:21:34 UTC	ITMs,MC2 -
L1	Mar 02 2005 11:53:34 UTC -- Mar 02 2005 12:03:34 UTC	ITMX -
H1	Mar 02 2005 20:04:16 UTC -- Mar 02 2005 20:14:16 UTC	all optics - start of monitor
H2	Mar 02 2005 20:04:16 UTC -- Mar 02 2005 20:14:16 UTC	all optics - start of monitor
L1	Mar 04 2005 05:42:35 UTC -- Mar 04 2005 06:23:35 UTC	ETMs -
L1	Mar 06 2005 13:43:35 UTC -- Mar 06 2005 13:53:35 UTC	corner optics – SUS power supplies
L1	Mar 06 2005 14:17:35 UTC -- Mar 06 2005 14:31:35 UTC	corner optics – SUS power supplies
L1	Mar 07 2005 07:03:35 UTC -- Mar 07 2005 07:19:35 UTC	ITMX,MC1,MC3,SM -
L1	Mar 08 2005 18:44:35 UTC -- Mar 08 2005 19:04:35 UTC	corner optics -
L1	Mar 10 2005 02:36:35 UTC -- Mar 10 2005 02:46:35 UTC	ITMX -
H1	Mar 11 2005 21:39:12 UTC -- Mar 11 2005 21:49:12 UTC	all optics - start of monitor
H2	Mar 11 2005 21:39:12 UTC -- Mar 11 2005 21:49:12 UTC	all optics - start of monitor
L1	Mar 15 2005 00:29:22 UTC -- Mar 15 2005 00:50:22 UTC	ITMX -
H2	Mar 15 2005 20:24:02 UTC -- Mar 15 2005 21:02:08 UTC	corner optics (both raw and band-passed) -
H1	Mar 17 2005 06:26:35 UTC -- Mar 17 2005 06:39:35 UTC	RM -
L1	Mar 19 2005 19:20:25 UTC -- Mar 19 2005 19:30:25 UTC	ETMY -
L1	Mar 20 2005 02:59:25 UTC -- Mar 20 2005 03:10:25 UTC	ETMX -
L1	Mar 20 2005 03:21:25 UTC -- Mar 20 2005 03:37:25 UTC	BS -
H1	Mar 21 2005 12:35:21 UTC -- Mar 21 2005 12:49:21 UTC	ETMY -
L1	Mar 21 2005 12:40:25 UTC -- Mar 21 2005 12:50:25 UTC	ITMX -

# Summary

- Most of the triggers from LHO happen when suspensionMon restarts.
- Several 1-min triggers from H2 occur on MC2, corresponding to lock losses
  - previous update:  
[http://www.ligo-wa.caltech.edu/~rrahkola/suspensionMon/update\\_050225.txt](http://www.ligo-wa.caltech.edu/~rrahkola/suspensionMon/update_050225.txt)
- A few times L1 corner optics triggered simultaneously -- unknown causes (power outage aftermath? power supplies tripped?).
- Moving forward:
  - Investigate correlations of interesting triggers
  - Minor tweaks to thresholds
  - “memory leak” problem not really a problem (but executable size can be reduced dramatically by not saving 10min of fully-sampled data for each channel)