



fastGlitch: Filtered time series displaying

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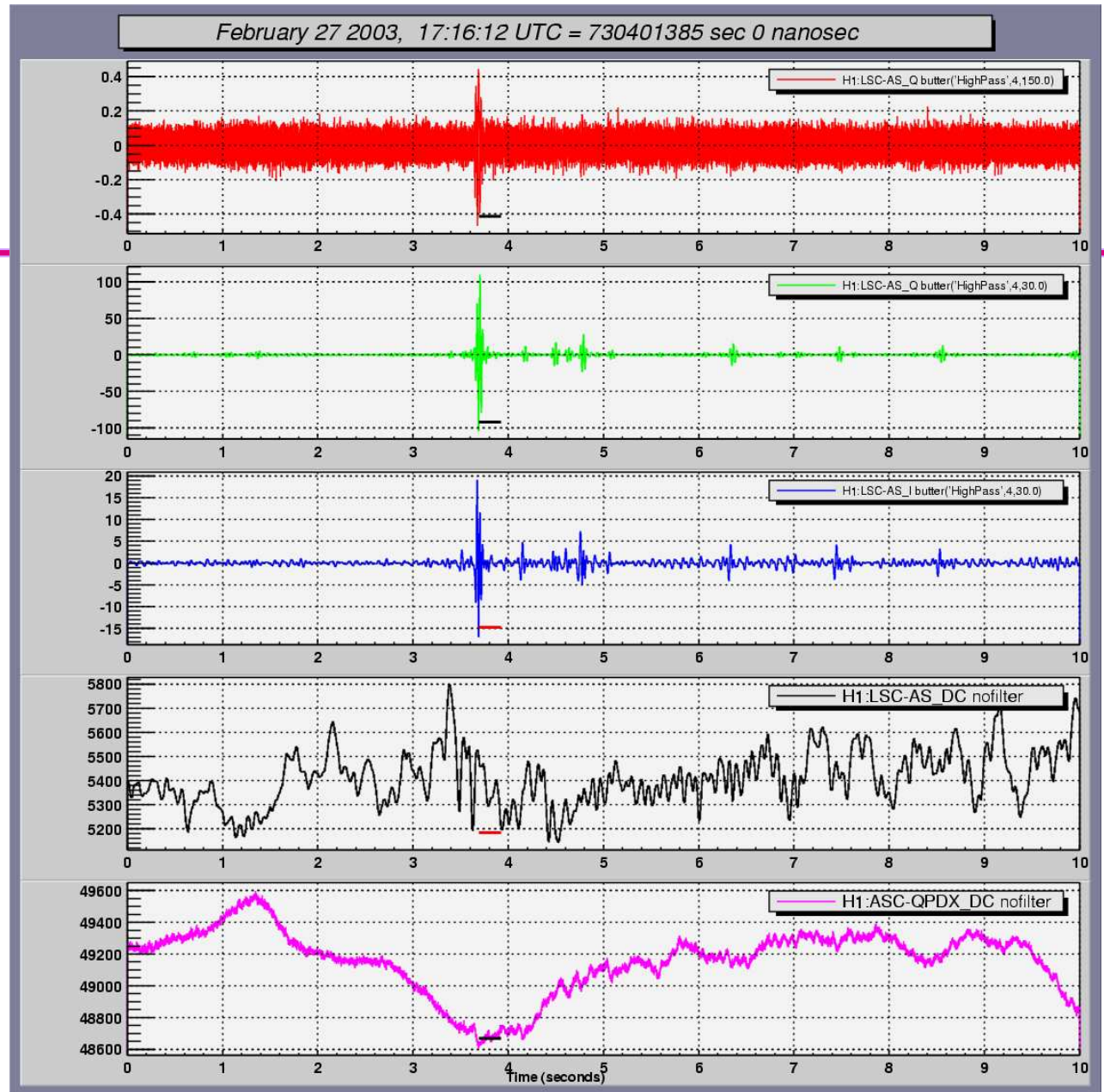
What is fastGlitch

- Plots filtered time series of several channels
 - Arbitrary filtering possible (uses M. Ito's FilterDesign class)
 - Uses ROOT graphics.
- Batch mode
 - Writes eps files
 - Comes with a shell script to query database for triggers and generate summary web page
- Interactive mode
 - Rudimentary, but ROOT graphics brings lots of defaults
- Since last Sunday: has audio capabilities (Linux)



Example S2, H1

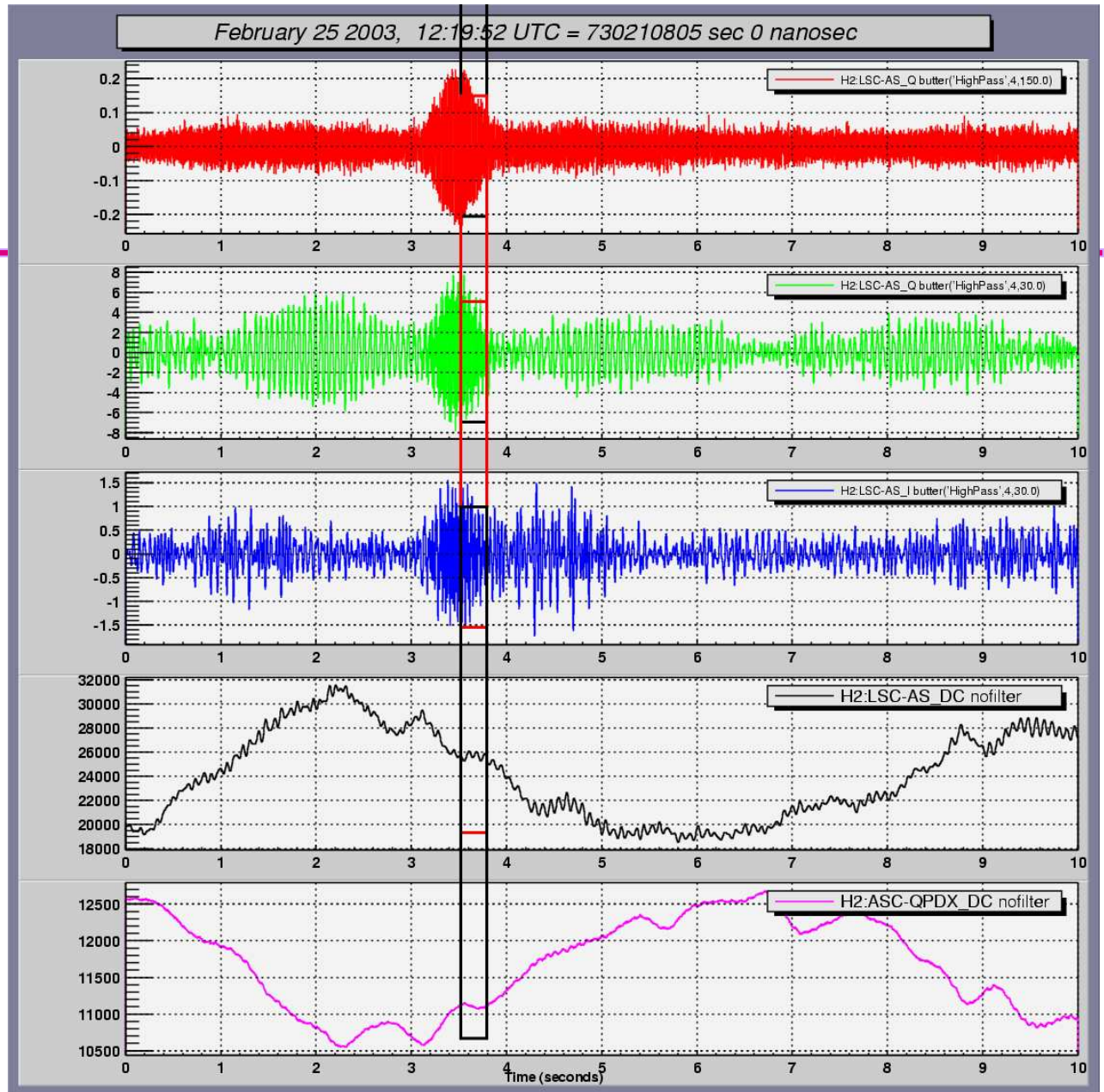
- Query DB for triggers
- Get frames locations
- Start fastGlitch
- Very useful for veto search!
- Typical H1 glitch





Example S2, H2

- Same thing for the 2km
- typical H2 glitch



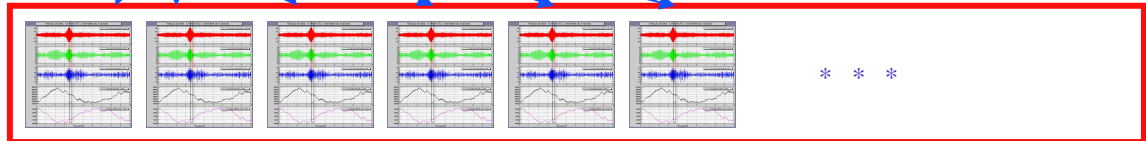


S2 Summary web page

- Created by script
- Per IFO:
 - Summary page (1 line per day)
 - Glitch list per day
 - Time series plots

GPS-start - GPS-stop	duration(sec)	start	stop	xml-file
729129613-729216013	86400	Feb 13 2003 00:00:00 UTC	Feb 14 2003 00:00:00 UTC	H1-zG-729129613.86400.xml
729216013-729302413	86400	Feb 14 2003 00:00:00 UTC	Feb 15 2003 00:00:00 UTC	H1-zG-729216013.86400.xml
729302413-729388813	86400	Feb 15 2003 00:00:00 UTC	Feb 16 2003 00:00:00 UTC	H1-zG-729302413.86400.xml
729388813-729475213	86400	Feb 16 2003 00:00:00 UTC	Feb 17 2003 00:00:00 UTC	H1-zG-729388813.86400.xml
*	*	*	*	*
*	*	*	*	*
*	*	*	*	*

name	start_time	start_time_ns	size	significance	subtype
Glitch 729559358	950073242	65.696602	18.662399	H1:LSC-AS_Q	
Glitch 729503750	835937500	46.228699	11.792	H1:LSC-AS_Q	
Glitch 729524363	394042969	16.146601	13.7962	H1:LSC-AS_Q	
Glitch 729524340	794921875	13.3425	14.9055	H1:LSC-AS_Q	
Glitch 729523372	801574707	10.3117	11.0289	H1:LSC-AS_Q	
Glitch 729523368	745849609	8.8200302	15.7988	H1:LSC-AS_Q	
Glitch 729524366	233764648	6.5426302	10.9958	H1:LSC-AS_Q	
Glitch 729512547	970092773	6.2365599	10.3624	H1:LSC-AS_Q	
Glitch 729503671	828308105	6.1570201	7.2414498	H1:LSC-AS_Q	
Glitch 729503738	676391602	5.3643098	12.4754	H1:LSC-AS_Q	
*	*	*	*	*	
*	*	*	*	*	
*	*	*	*	*	





How to use fastGlitch

fastGlitch [-conf *file.conf*] [-batch | -nobatch] [-save | -nosave] [-boxes | -lines | -noboxes] [-infile "*.gwf"]

- Batch mode (Requires `-save` option)
 - Produces one plot per trigger (specified in xml file)
- Interactive mode (= `-nobatch`)
 - Allows interactive use of ROOT graphics (i.e. zoom, etc.)
 - No full GUI yet.
- `-boxes | -lines | -noboxes`
 - To mark triggers draw boxes, only horizontal lines or nothing
- `-infile "*.gwf"`
 - Specify frame files; DMTINPUT is used if not specified



The configuration file

Default values for
command line options



```
#####  
# fastGlitch Command line options (use one line per option)  
#####  
# DatEnv options are not supported here,  
# i.e. -infile, -debug, etc.have to be specified on the command line  
# available options: -batch, -nobatch, -save, -nosave, -lines, -boxes  
-batch  
-save  
-lines
```

Trigger time information
(time or xml file)



```
#####  
# fastGlitch parameters (one line per parameter, except for Channels)  
#####  
# available parameters:  
# Time, Stride, OverlayTriggers,  
# GraphicsPrefix, GraphicsFormat, Channels  
Time = myfile.xml  
# Time = 727549933  
# Time = Jan 25 2003 17:12:00 UTC  
# Time = now - 3600  
Stride = 10  
TimeOffset = 3
```

Output graphics setting



```
OverlayTriggers = MyOverlay.xml  
GraphicsPrefix = out/fastGlitch-  
GraphicsFormat = eps,png,gif,jpg,pdf
```

Number of channels,
channel names and
filter strings



```
Channels = 5  
L1:LSC-AS_Q butter('HighPass',4,150.0)  
L1:LSC-AS_Q butter('HighPass',4,30.0)  
L1:LSC-AS_I butter('HighPass',4,30.0)  
L1:LSC-AS_DC nofilter  
L1:ASC-QPDX_DC nofilter
```



Where it is: Web link

- <http://ligo.mit.edu/~sballmer/fastGlitch>
 - Documentation and download
 - Link to S2 summary page (only H1 & H2)
- Will soon be added to the gds tree