

mDV

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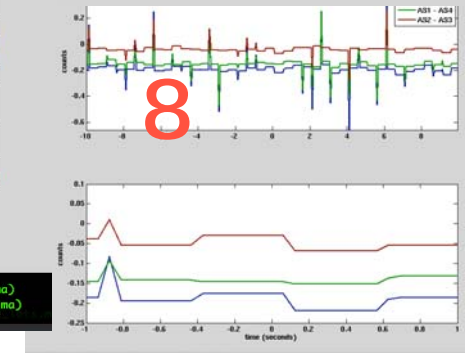
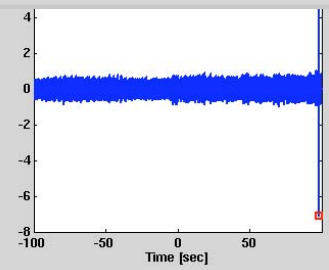
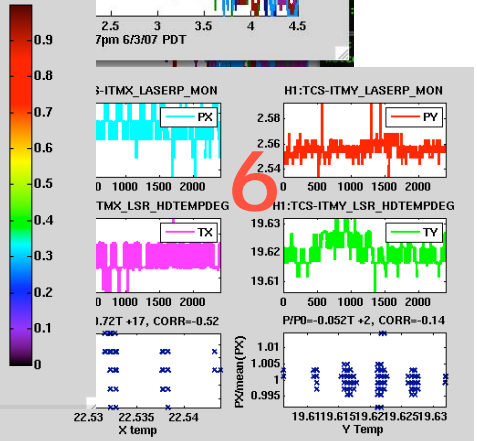
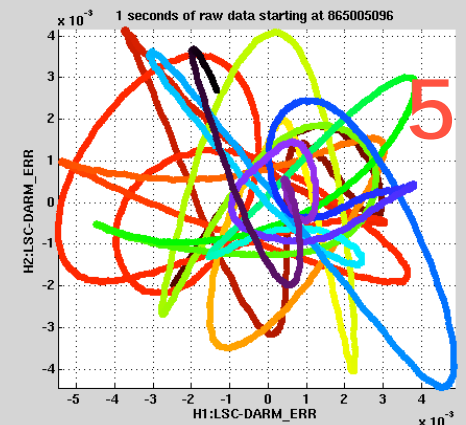
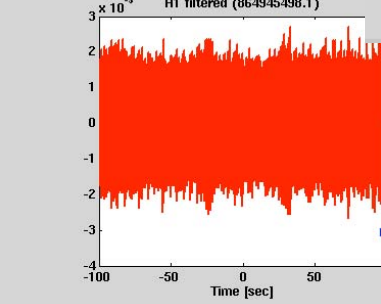
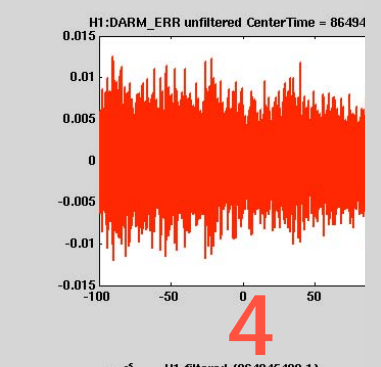
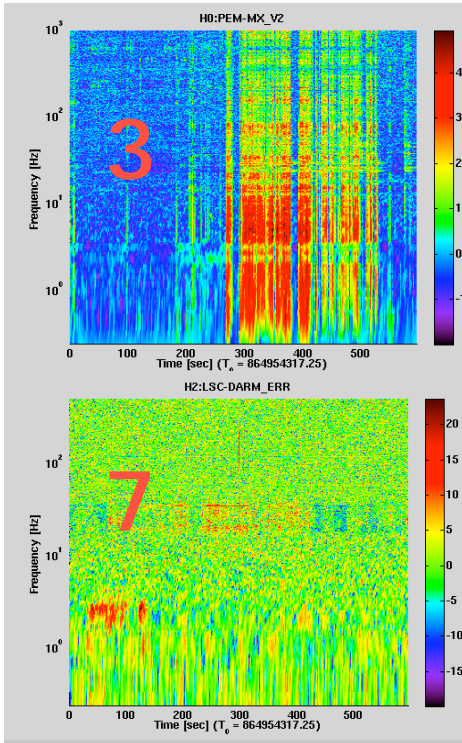
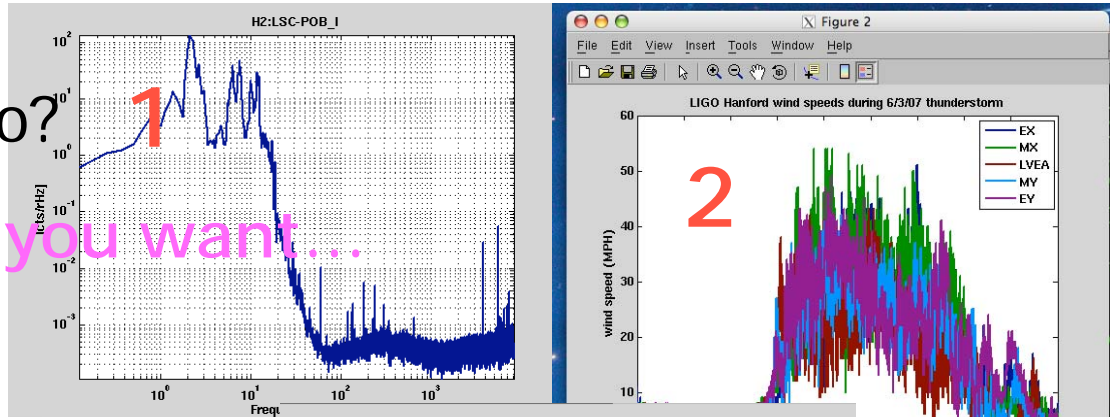
# Contents

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# Why?

- Existing tools are great, but limited
- Putting data in something else (like MATLAB or Mathematica) has been “hard”

What does mDV do?  
 (almost) anything you want....



```
H1 largest glitches 864945498.1 (4.1 sigma)
H2 largest glitches 864945497.9 (27.2 sigma)
>>
```

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# Features

- mDV can easily import data to matlab
  - get\_data function
    - Wrapper around Ben's NDS client
    - Wrapper around Keith T.'s and Shourov's frgetvect tools
  - From anywhere, even at home, with NDS
- User scripts: medium or high level functions provided (plot\_struct, dtfft2, carpet). Please write more!
- Fairly fast at getting data
- Scripts are portable to other installations

# Limitations

- Can clobber NDS servers
  - That is FB0 at the LHO/LLO
- If using Keith's method of reading frame files, it will crash matlab when asking for a channel that doesn't exist
  - Also dir2framelisting can take a while
  - Ditto with Shourov's framecaching
- Doesn't handle missing utilities gracefully (tconvert, matapps)
- Cannot operate IFO

## How does mDV do that?

- `get_data(channels,type,startGps,dur)`
  - Config to get data with NDS or frame files
- `gps('tconvert string')`

# How does mDV do that?

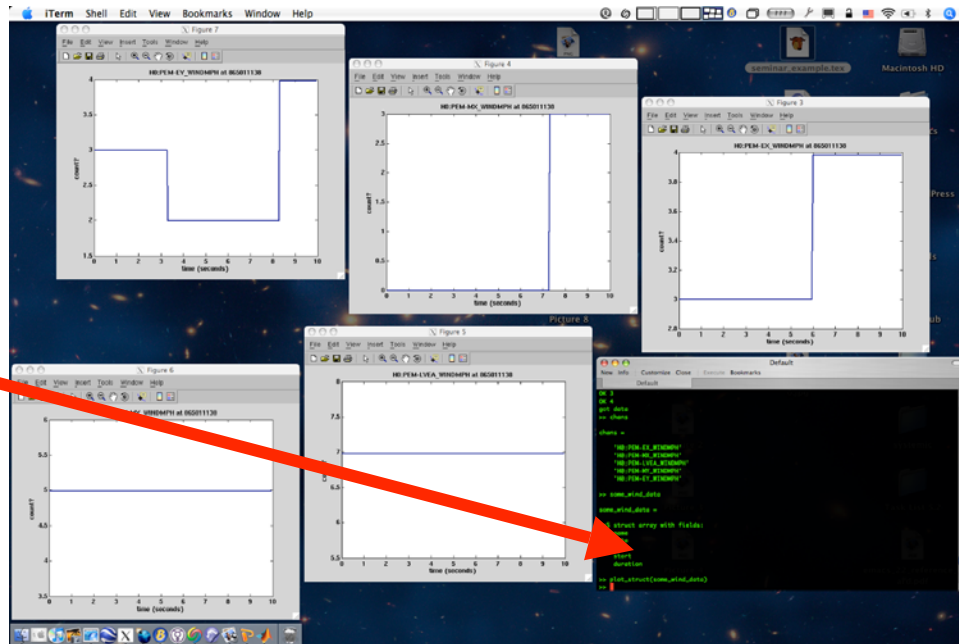
```
>> chans
chans =
'H0:PEM-EX_WINDMPH'
'H0:PEM-MX_WINDMPH'
'H0:PEM-LVEA_WINDMPH'
'H0:PEM-MY_WINDMPH'
'H0:PEM-EY_WINDMPH'
>> some_wind_data = get_data(chans,'raw',gps('now - 1 hour'),10);
```

```
< M A T L A B >
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Version 7.4.0.287 (R2007a)
January 29, 2007

To get started, type one of these:
helpdesk, helpdesk, or demo.
For product information, visit www.mathworks.com.

welcome to justin's Matlab
>> pwd
ans =
/Users/justing/Documents/Matlab/mDV
>> setup
only NDS is available
only raw data available yet (i.e. no trends)
>> some_wind_data = get_data(chans,'raw',gps('now - 1 hour'),10);
```

```
>> some_wind_data
some_wind_data =
1x5 struct array with fields:
    name
    data
    rate
    start
    duration
>> plot_struct(some_wind_data)
```





# Installations

- LHO CDS
- LHO GC
- LHO LDAS
- CIT LDAS
- LLO LDAS
- A few laptops
  - 40m lab

# Installing

- You will need
  - 'nix based system
  - Access to data with either...
    - Ben's MATLAB NDS client (LHO CR, laptops)
    - Mounted frame files (LDAS, 40m, LLO CR)
  - Matapps (see daswg cvs howto)
  - Ligotools
  - MATLAB
  - mDV package from
    - mdv.tgz
    - cds cvs account

# Questions?

# Recent examples

- <http://tinyurl.com/2948jo> Evan G. searches many channels for features
- <http://tinyurl.com/2ccd5m> Rana and Robert examine seismometers during wind farm impact study.
- <http://tinyurl.com/2b8uzt> Rana and Justin look at upconversion data from “tap test”
- <http://tinyurl.com/ys9tzd> I find ~11Hz comb in radio channel.