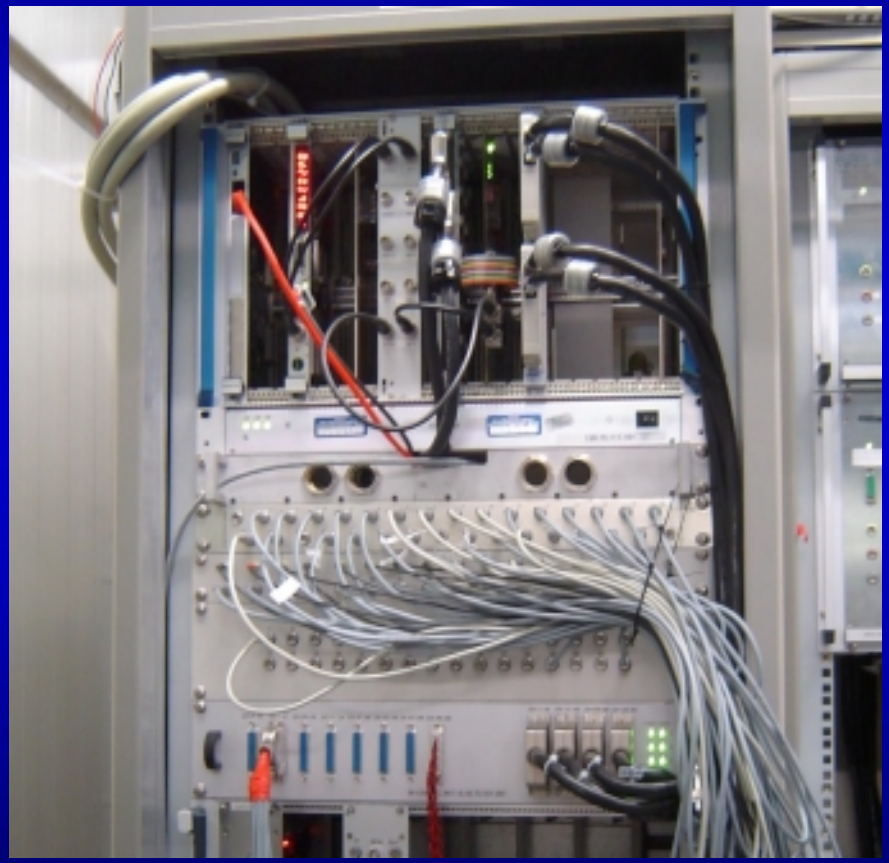
DATA TOOLS

‚how can data exchange work?‘

Max-Planck-Institut für Gravitationsphysik
(Albert-Einstein-Institut)

Universität Hannover

Data acquisition



fast

- 24-bit ADC interface:
  32 + (2*) 16 channels
  up to 16kSample/sec

slow

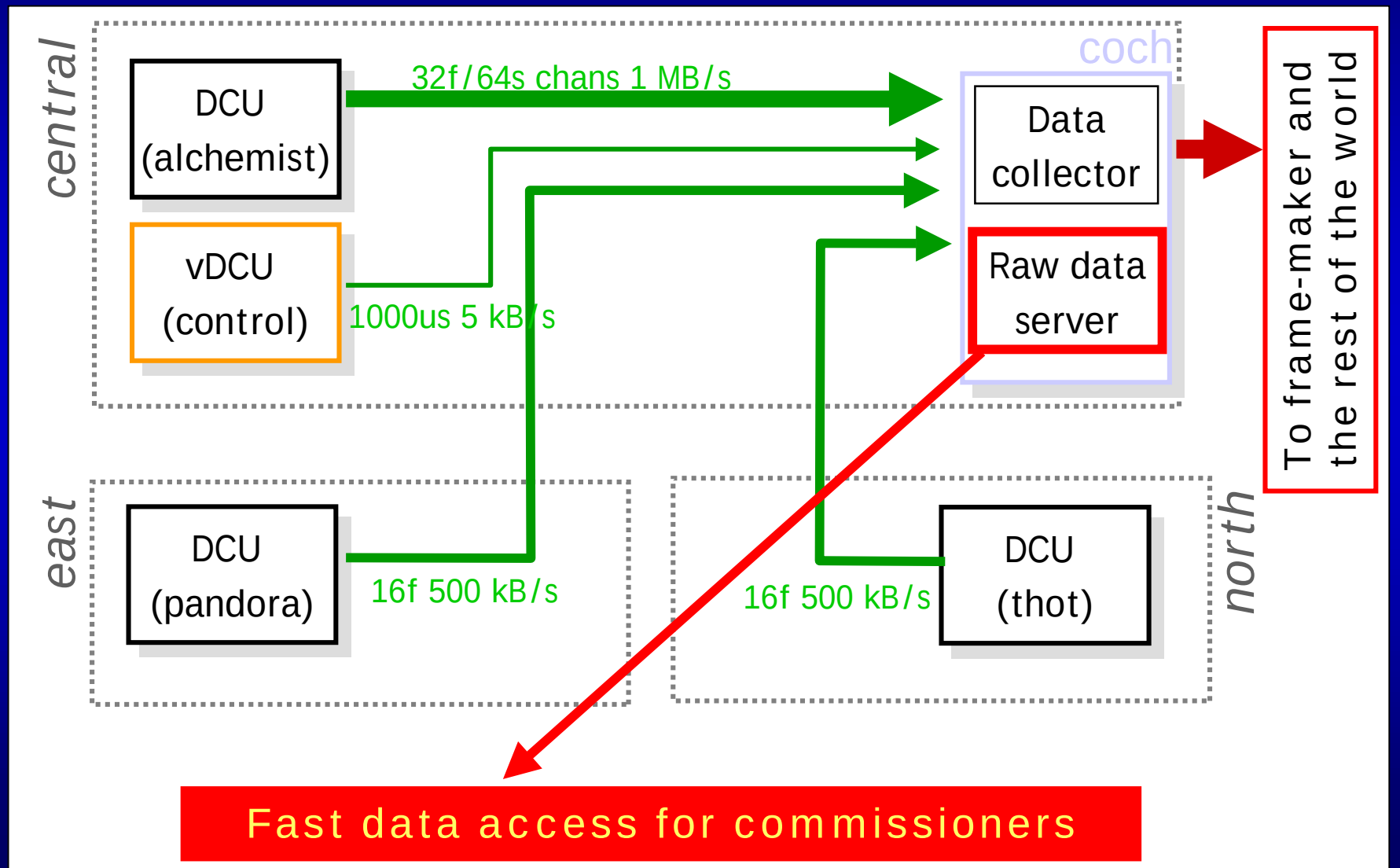
- 12-bit ADC interface:
  64 channels
  with 512 Sample/s

control

- LabView system acquires
  ~ 1000 channels @ ~1Hz

⇒ ca . 60 GB/day

Data collection



File formats

- Raw data files (1 second duration)
  - fs <= 16384 Hz

20 days of data

- Frame files (1 minute duration)
  - fs <= 16384 Hz
  - 60 frames per file, one second per frame
  - All channels in one file

20 days (Han)
100 days (Golm)

- Hour trends files (1 hour duration)
  - fs = 1 Hz
  - Min, max, av

1 year of data

- Day trend files (1 day duration)
  - fs = 1/60 Hz
  - Min, max, av

1 year of data

DAQS web interface

- Informations about the current DAQS setup
- Channel configuration (sampling, filters)

GEO++ and Triana

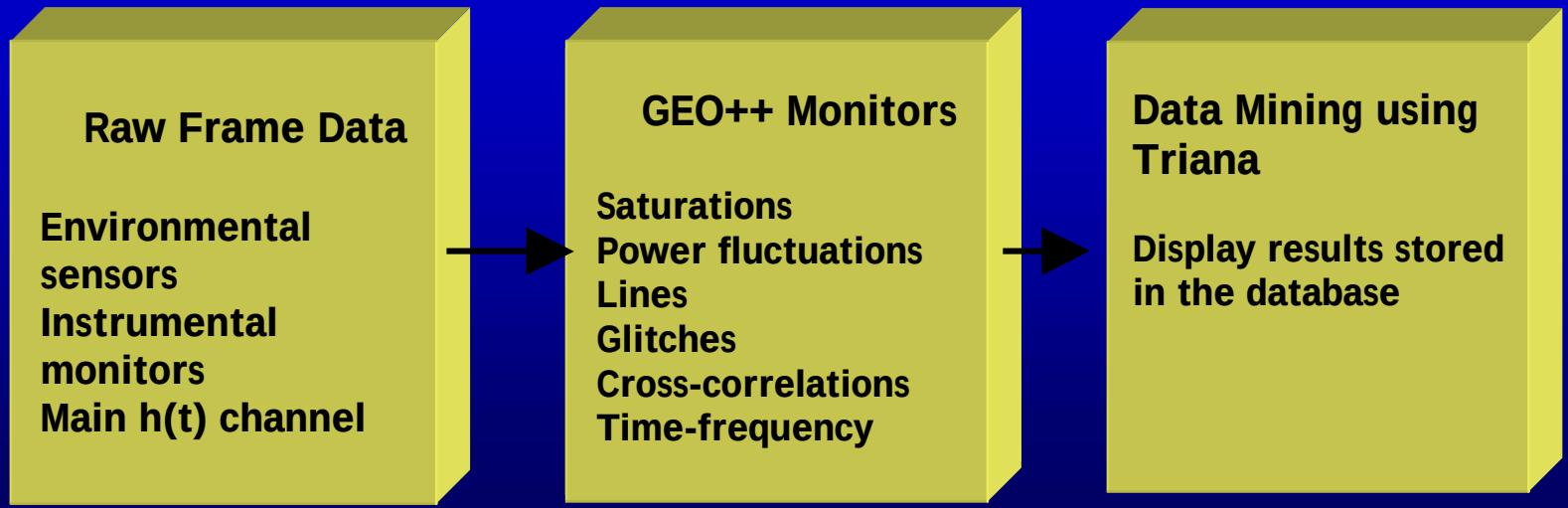
- Developed at Cardiff University

CARDIFF UNIVERSITY

- **Idea: To get a tool that can deal with a large amount of data**

Software environment - GEO++

- Process large number of channels with many algorithms
- Store faithful summary
- Triana Tools for retrieval of results from the database



GEO++ Main Monitors

- InspiralSenseMon
- GlitchMon
- HACRMon
- LineMon
- PowerTrackerMon
- SaturationMon
- AmplitudeCouplingMon
- PhaseCouplingMon
- CoherenceMon
- BicoherenceMon

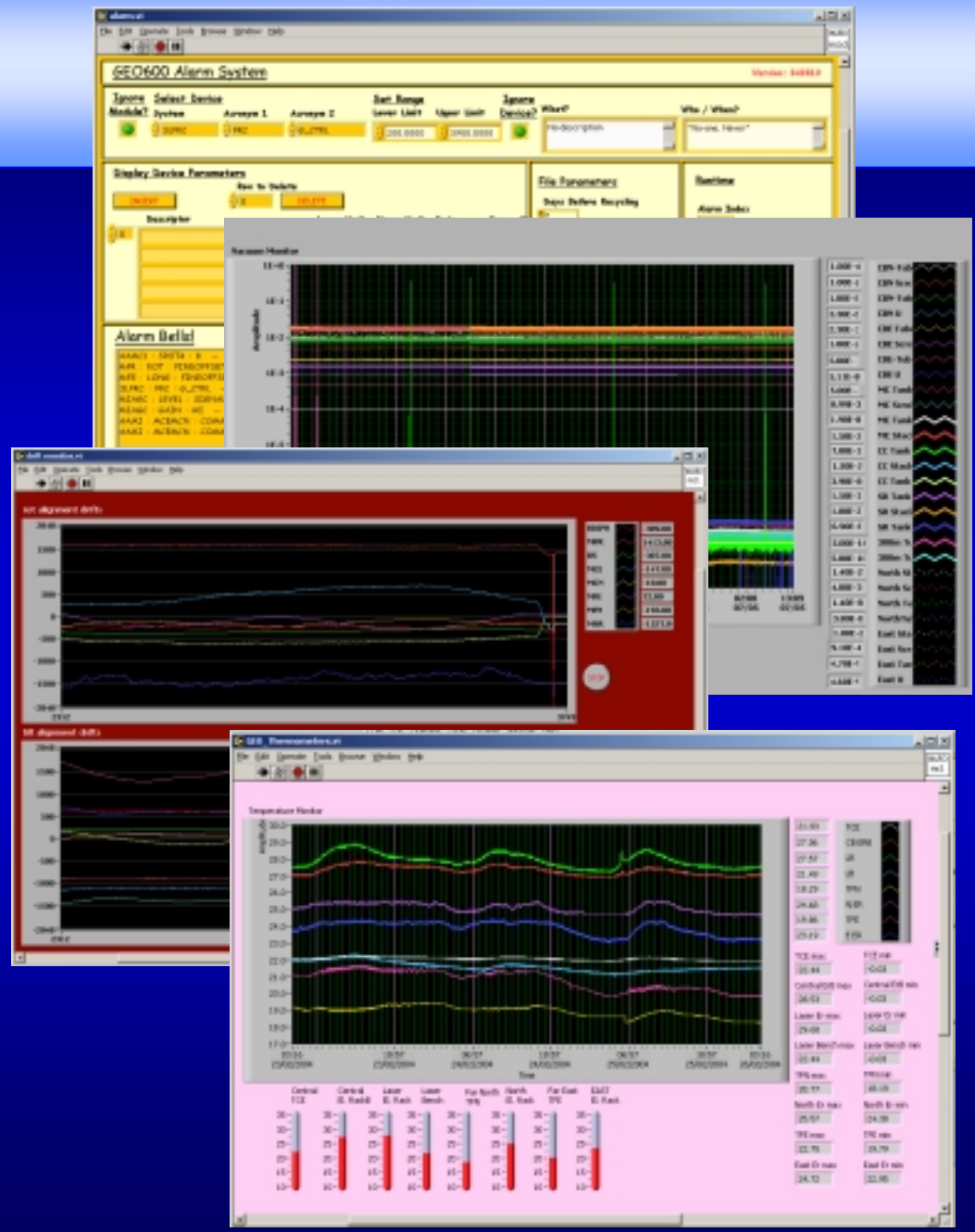
Used for ‚real' data analysis

Online running monitors, that can be used for detector charaterisation

For various reasons we do not often use GEO++ / Triana for commissioning (?)

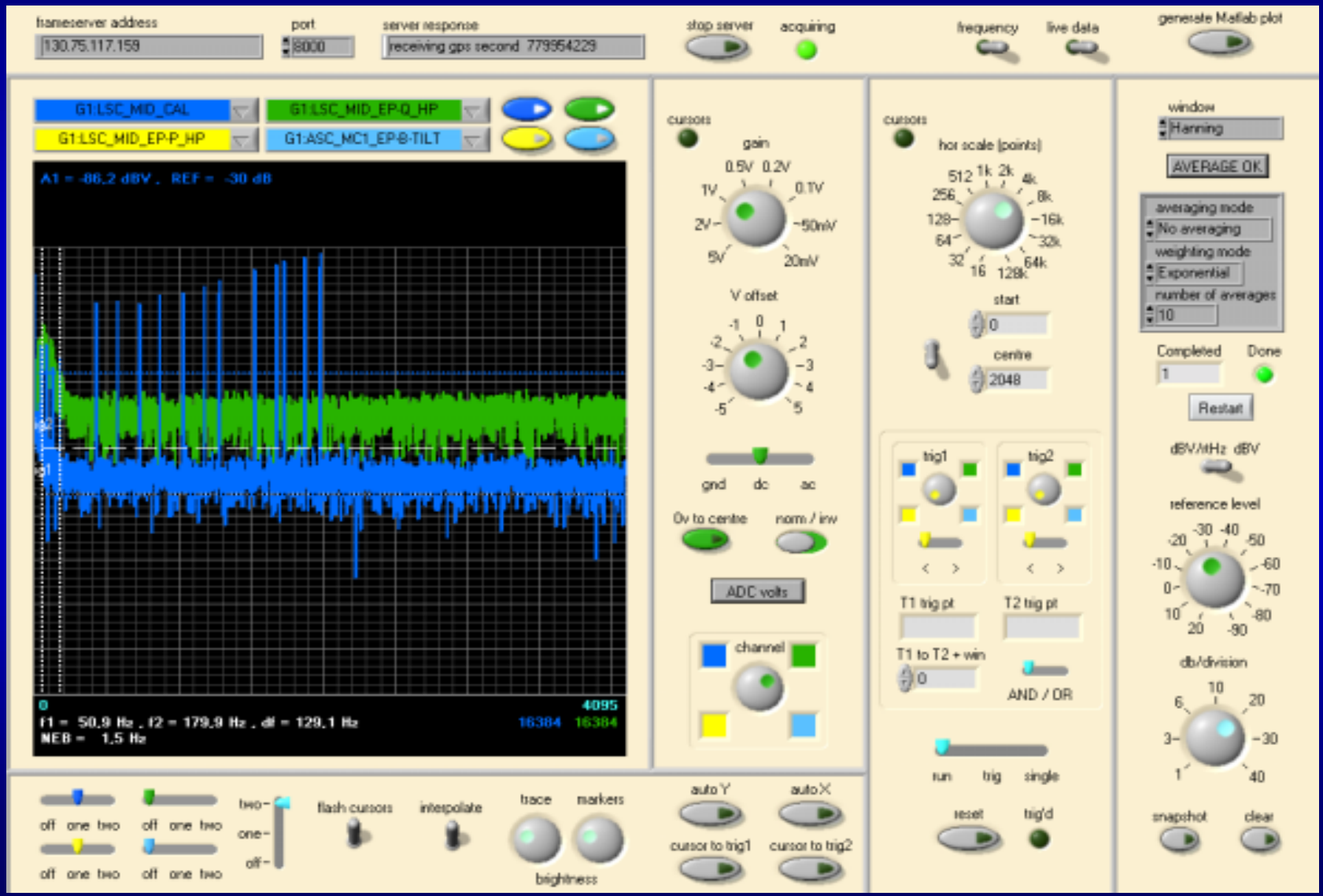
Monitors

- Alarm.vi
- Vacuum.vi
- Drift.vi
- Temperature.vi

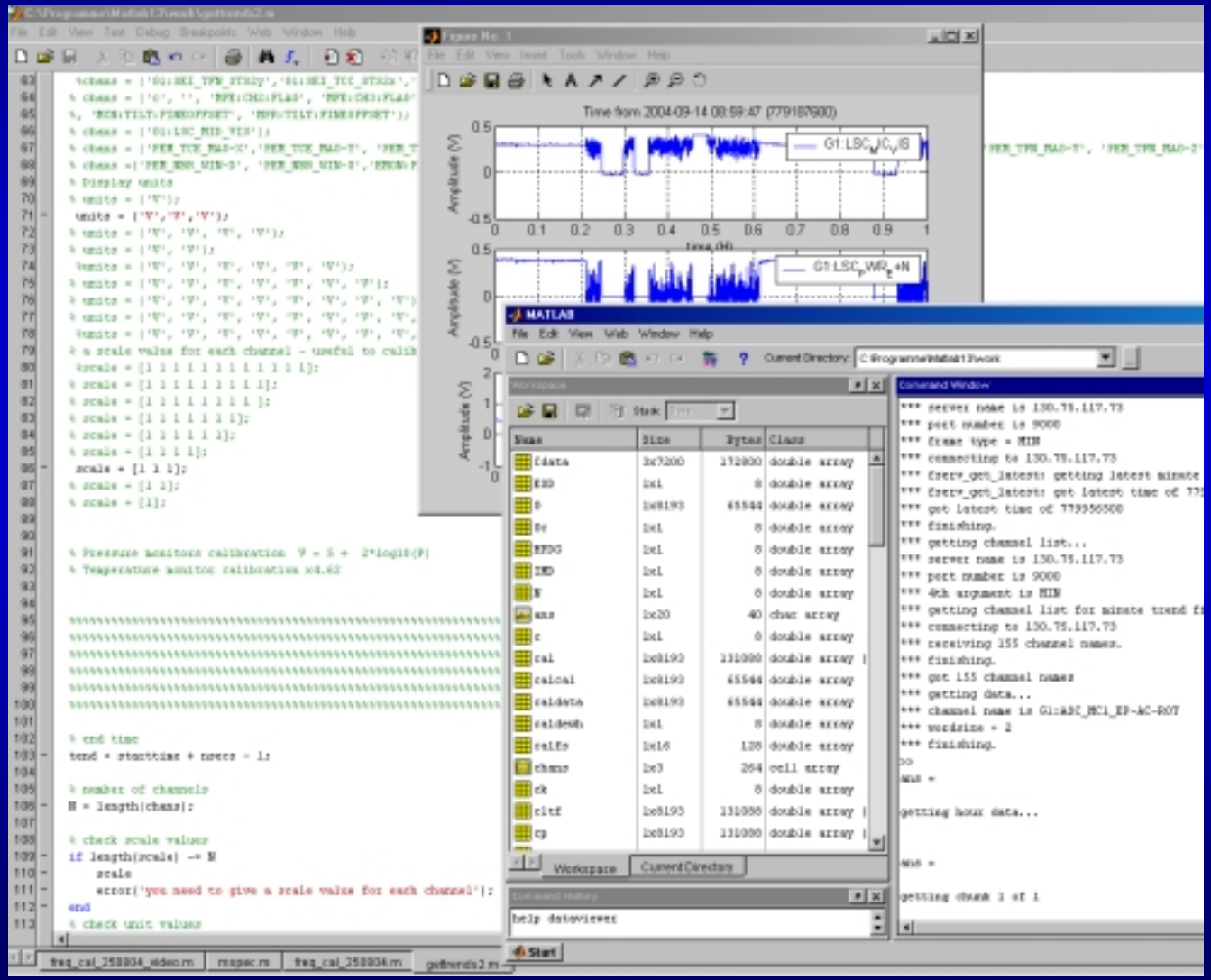


Not ‚real' data tools, but can give us useful hints for commissioning

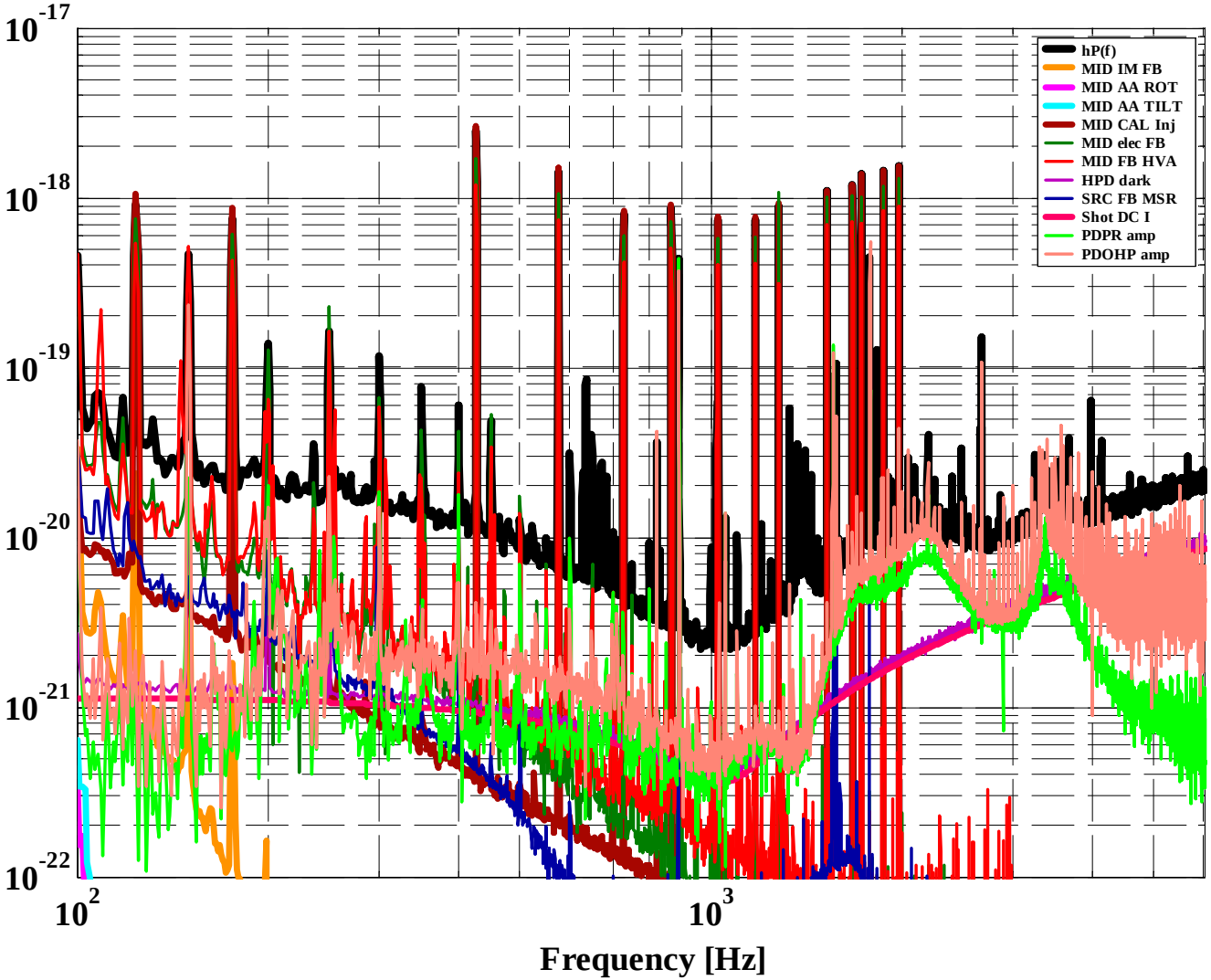
Labview Oscilloscope



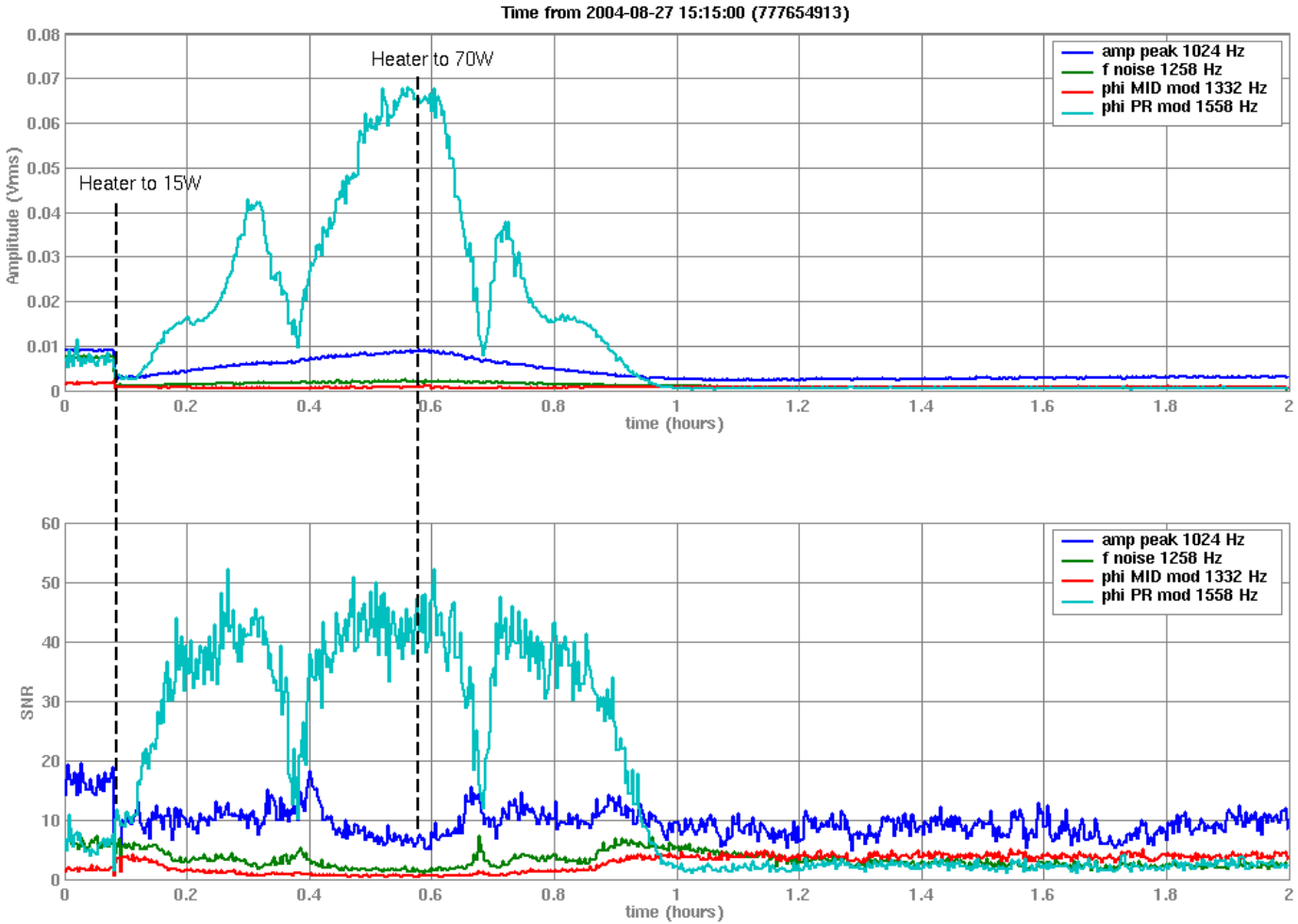
Data access with Matlab



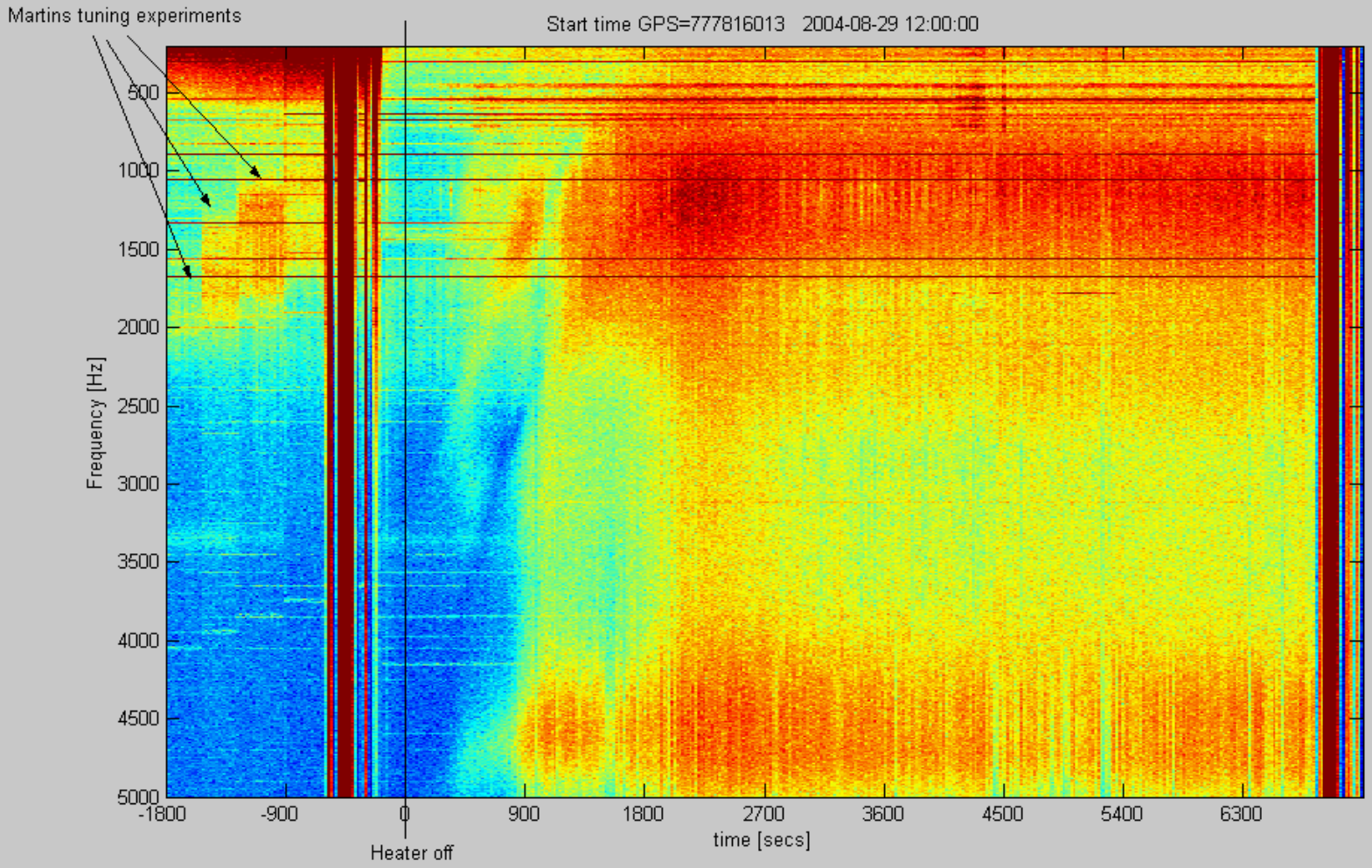
Noise projections



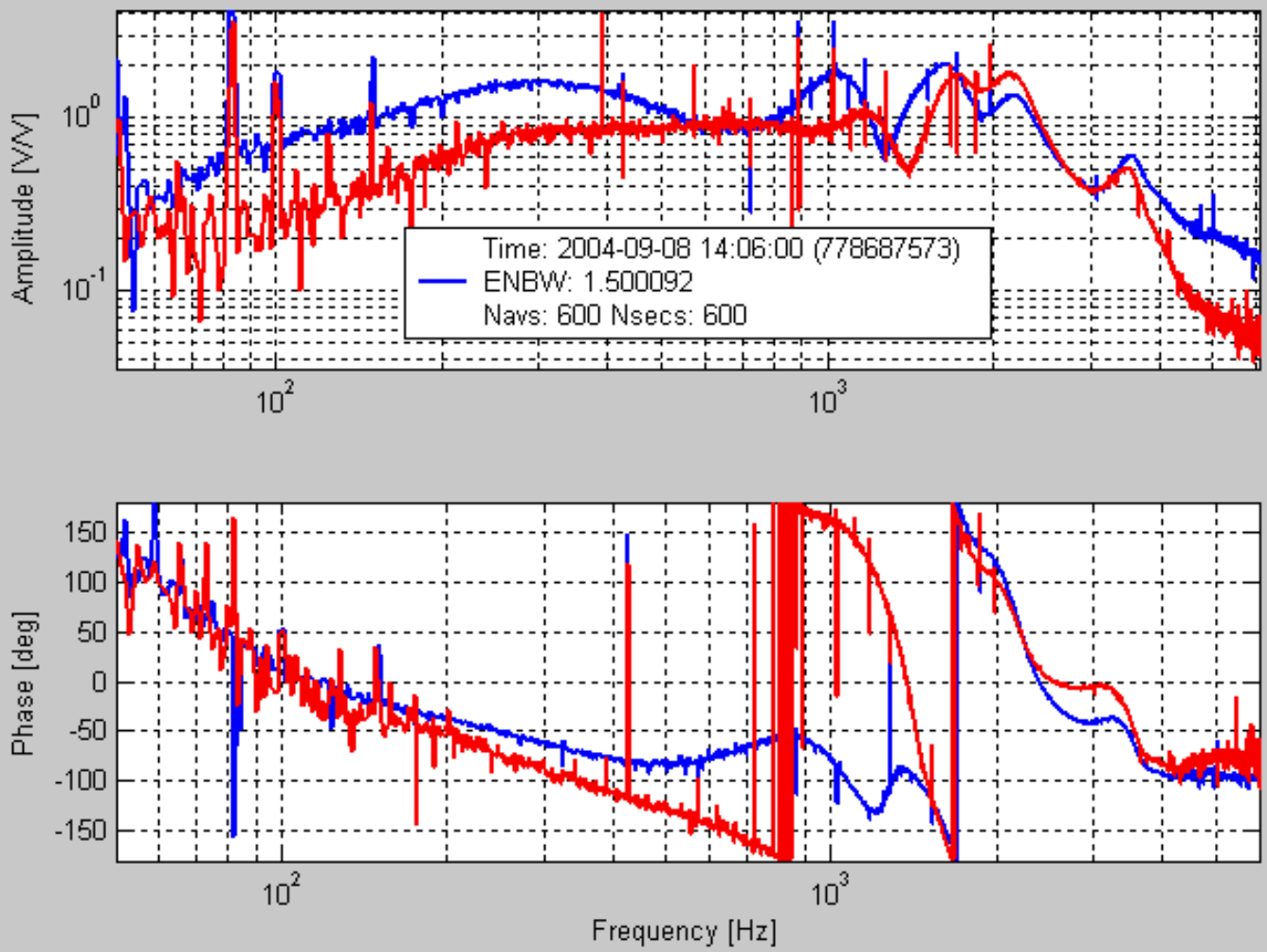
Tracking lines



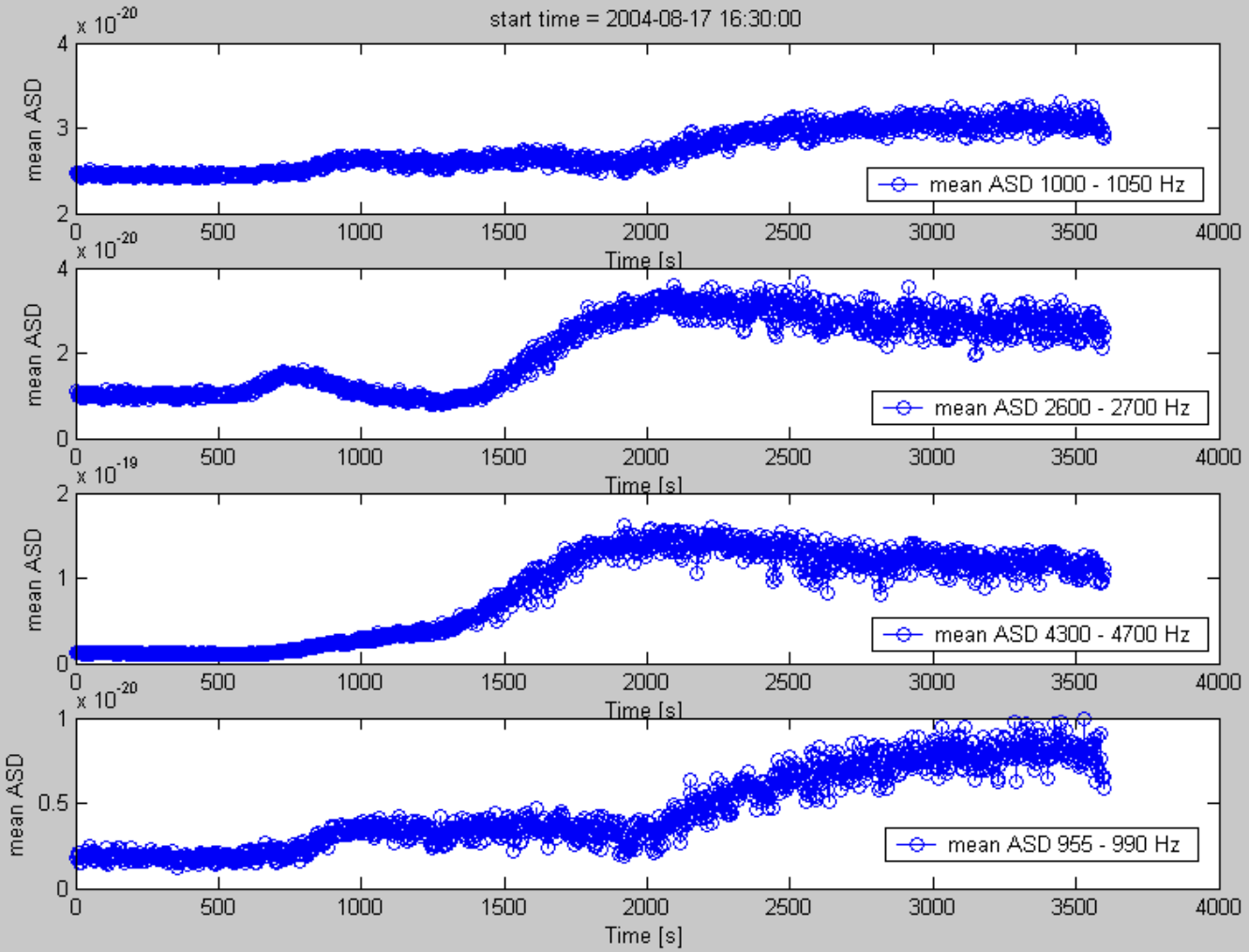
Spectrograms



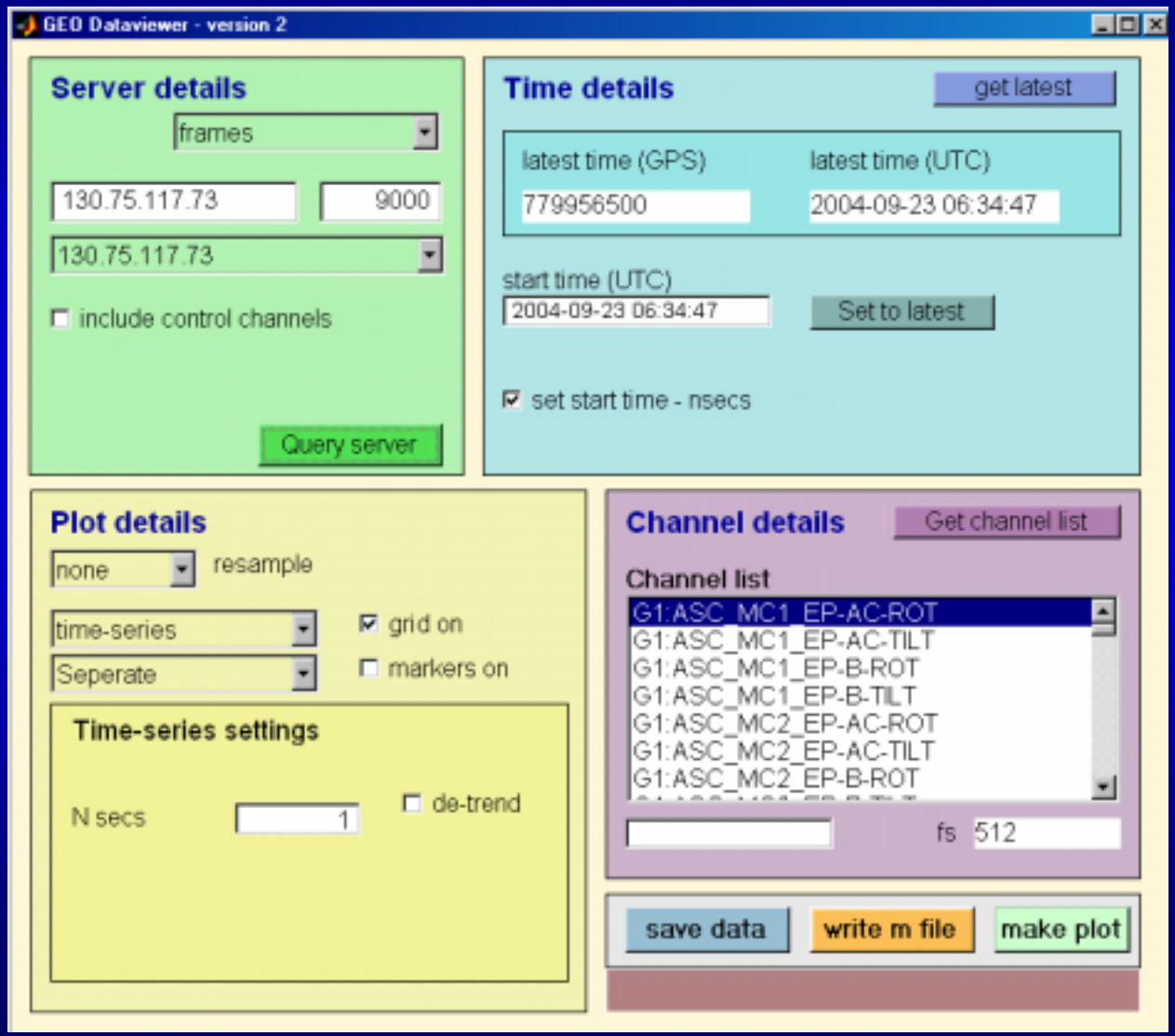
Transfer functions



Sensitivity per frequency band



General Tool: Matlab Dataviewer



Matlab-compiler
=> Stand alone version

Possible data exchange (discussion)

At the moment data access for the use of commissioning seems only to be sensible, if the commissioners are personally at the site (???)

In future maybe data access for the use of commisioning should also be possible from a different antenna site (???)

Data access at the site

1. Use one of the computers at the site:
   - Everything is in place

No problem at all

2. Use of your personal computer:
   - You need to install the software on your computer
   - We provide all tools (matlab-files, oscilloscope.vi)

Stand alone data viewer

   - Access to raw data and frame server

No problem

Data access from outside the side (need ?)

- Only use your personal computer (???)
- You need software *Stand alone data viewer*
- We provide all tools (matlab-files, labview oscilloscope)

No problem

But now you are outside our domain and behind several firewalls!

- Probably only access to the hannover frame server available (due to our security philosophy no access to the raw data server in Ruthe)

Allow server access for your personal IP adress