

Updates on KAGRA detector characterization

KAGRA detchar team

- **CLIO test operation in the middle of Oct**
(Hayama, Miyakawa, Miyoki, Ohashi, Tanaka, Uchiyama, Yamamoto, Yuzurihara)
 - **End-to-end test of prototype detchar system during the operation.**
 - **Time domain calibration**
 - **Hardware injection of correlated glitches in GW and acceleration monitor.**
- **Developing multi-variate statistical analysis of multiple channels.**
 - **Supervised (Korea)**
 - **Unsupervised (New project)**
- **Software environment**
 - **Introducing Git for version management.**

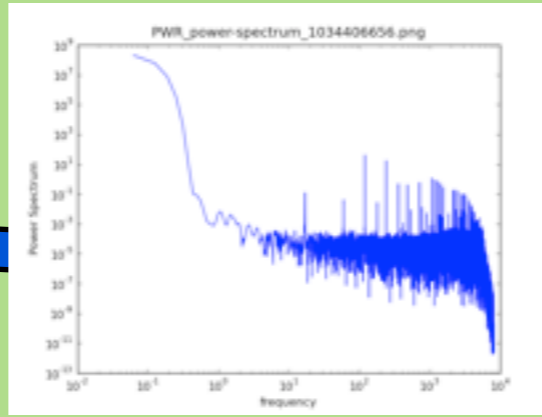
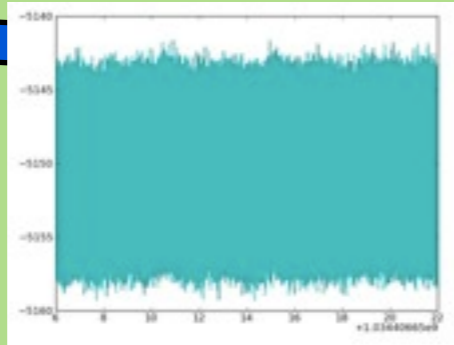
Detector Characterization system

Inst. Mon



photo detector

16s

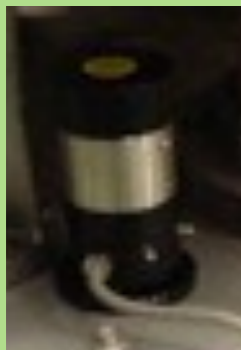


RT WS



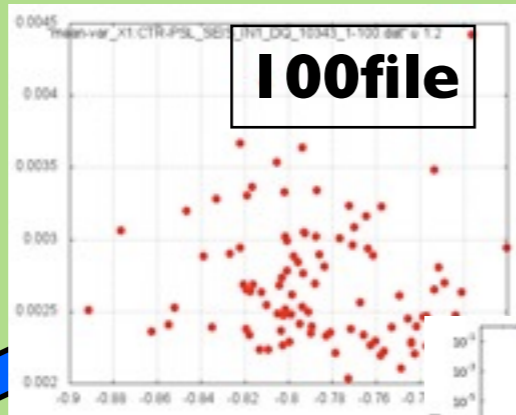
RealTime update @16s

Env. Mon

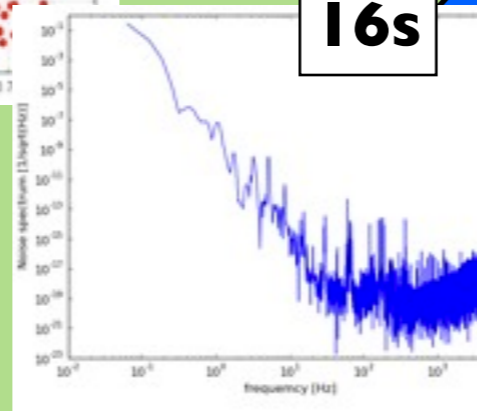


acce.

100file



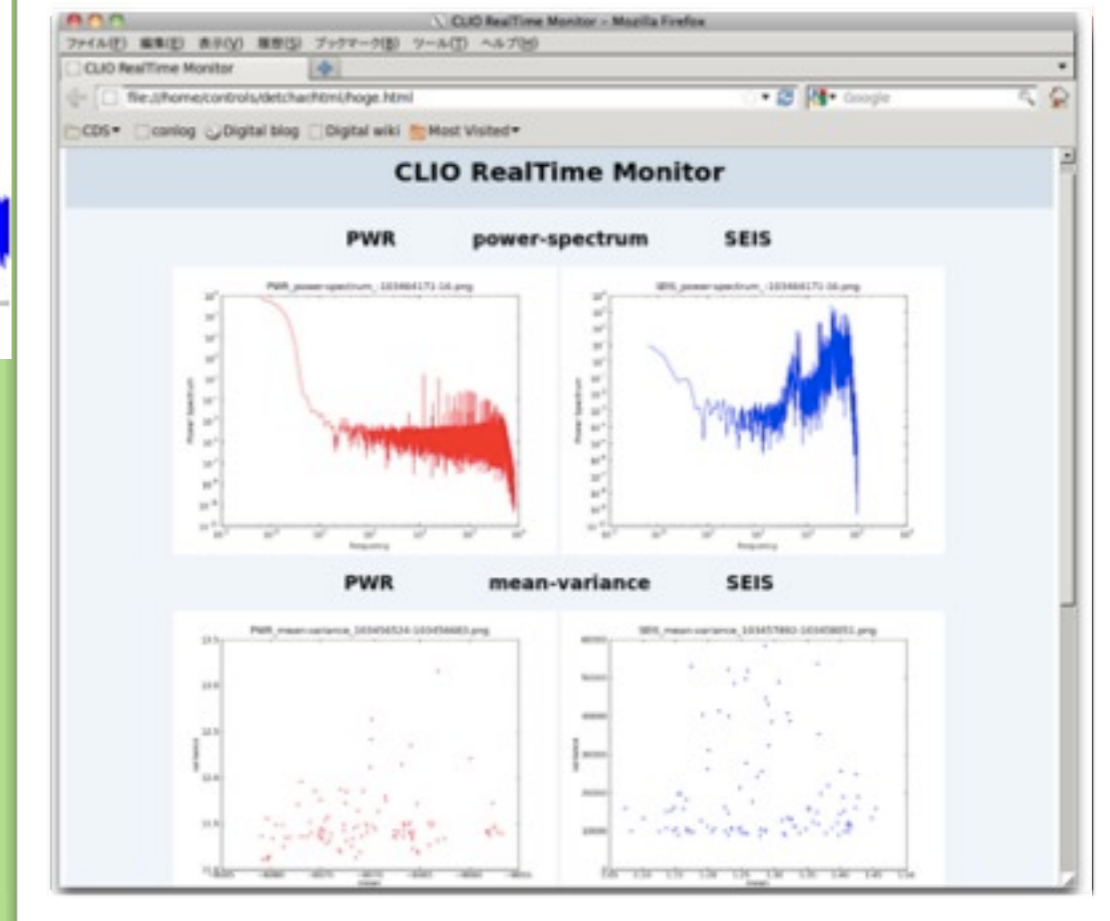
16s



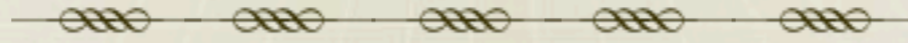
Sens. Mon



CLIO



K.Tanaka



Calibration

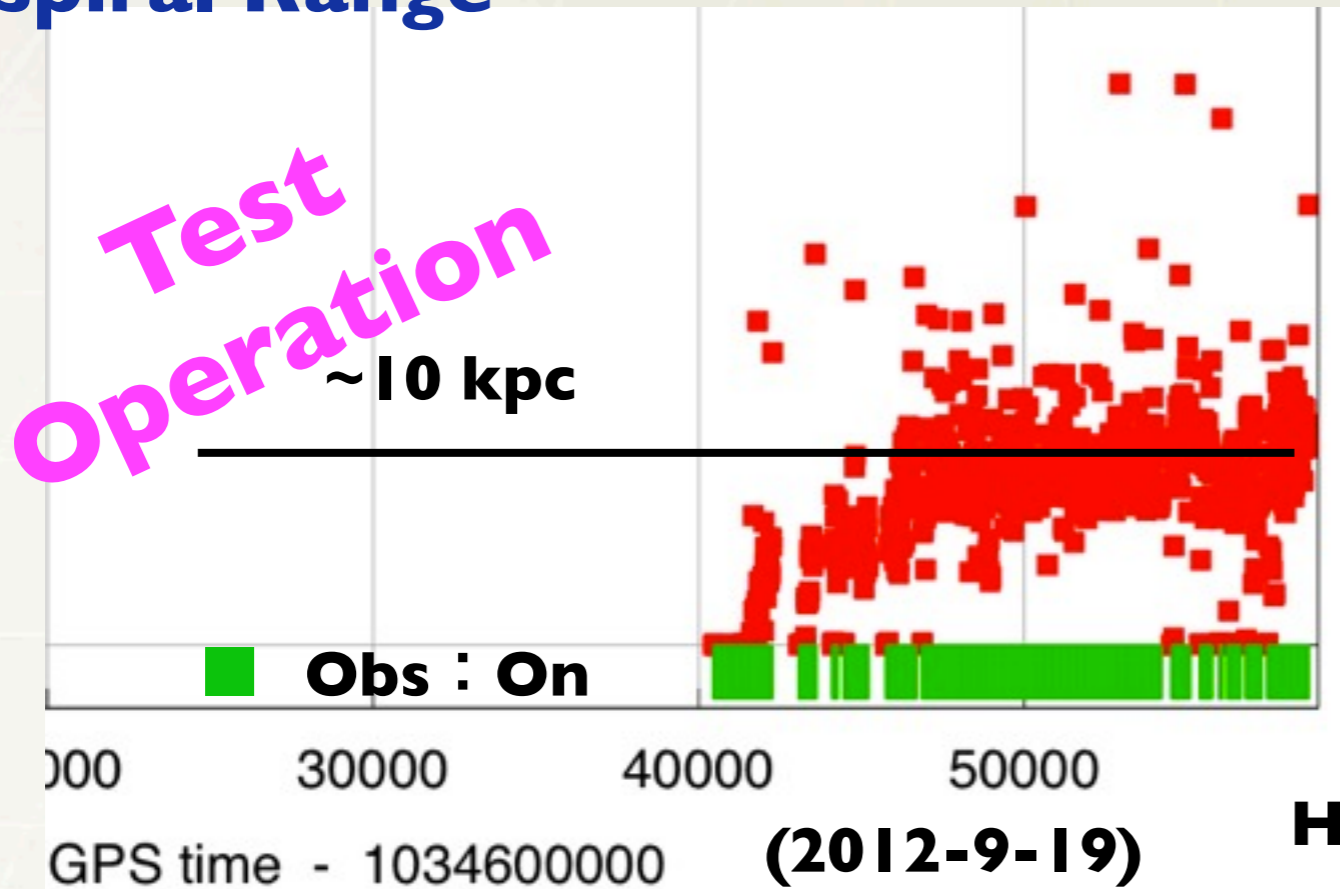
Convert to physical unit

Processing on time-series data

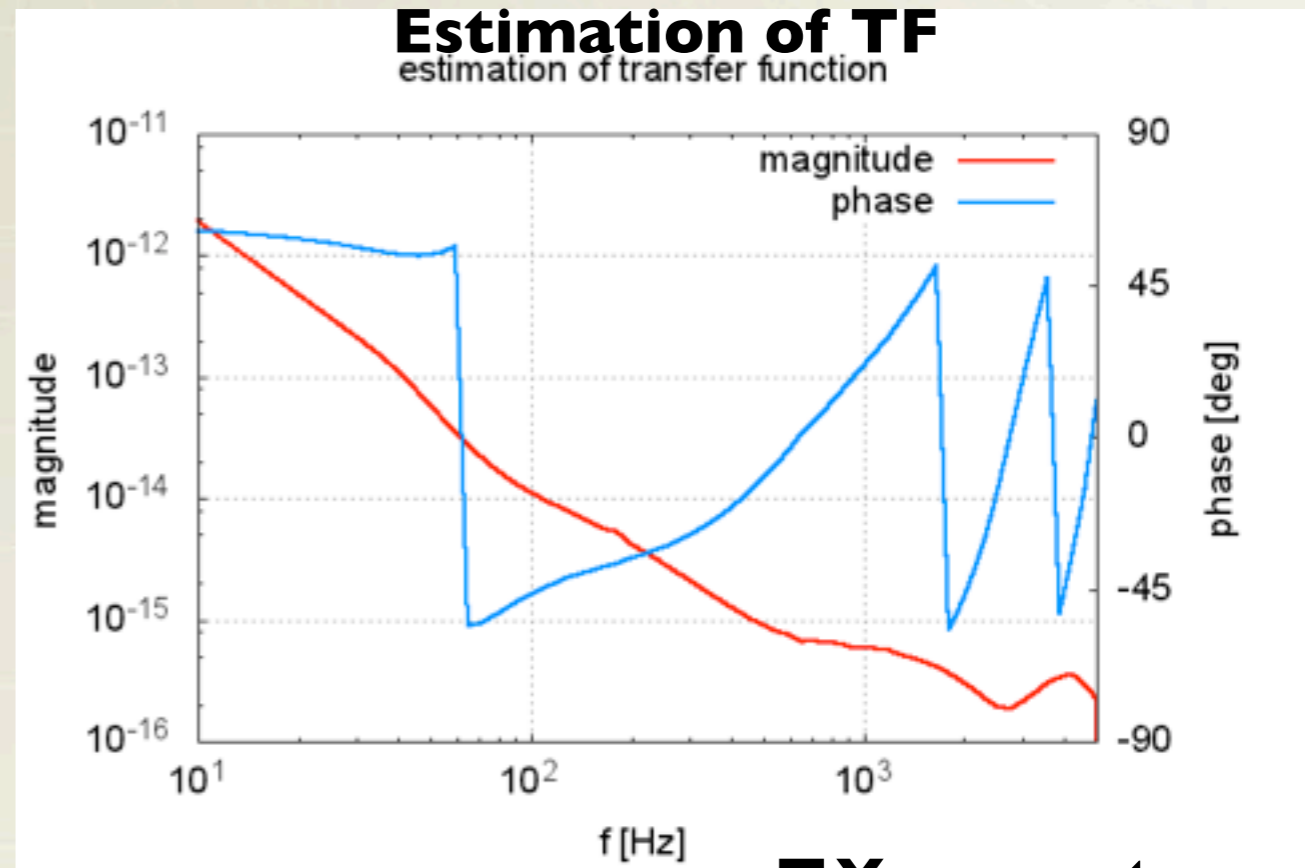
Generation of filters of TF

→ various kinds of analysis

Inspirational Range



- Real time display of the inspiral range
- Total locked time ~13hrs

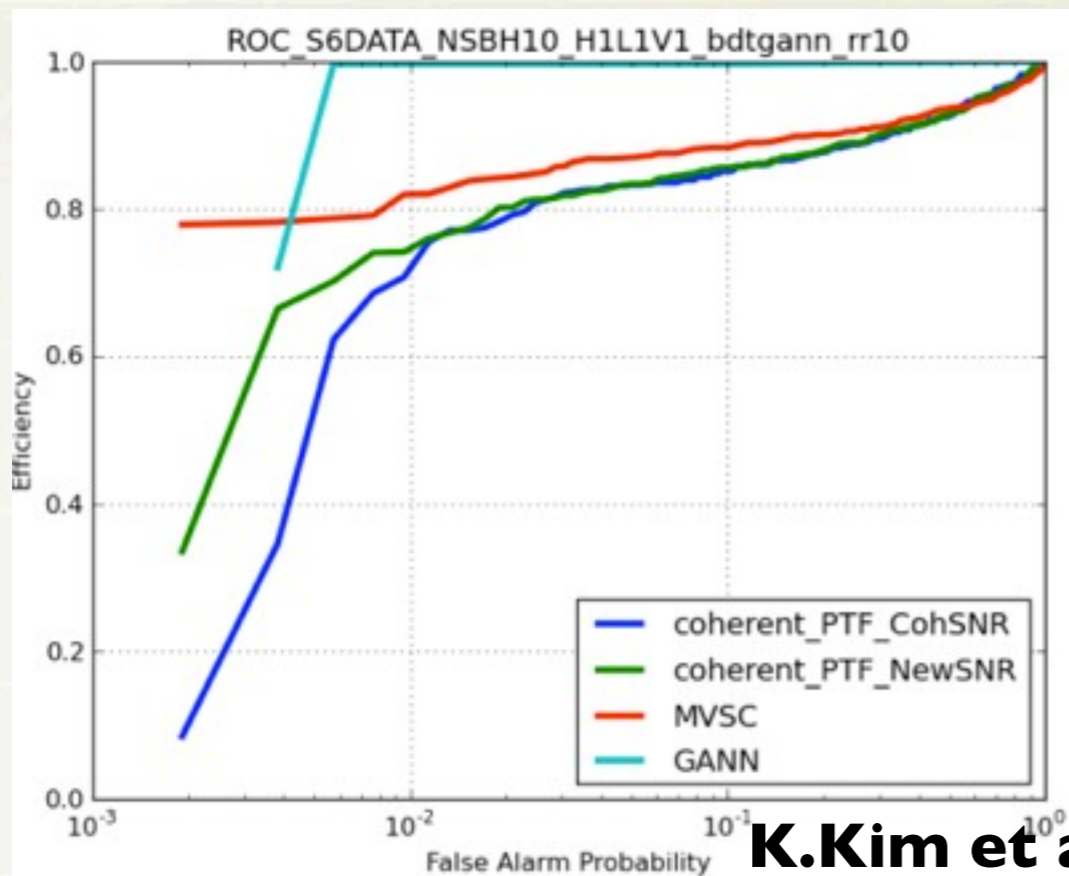
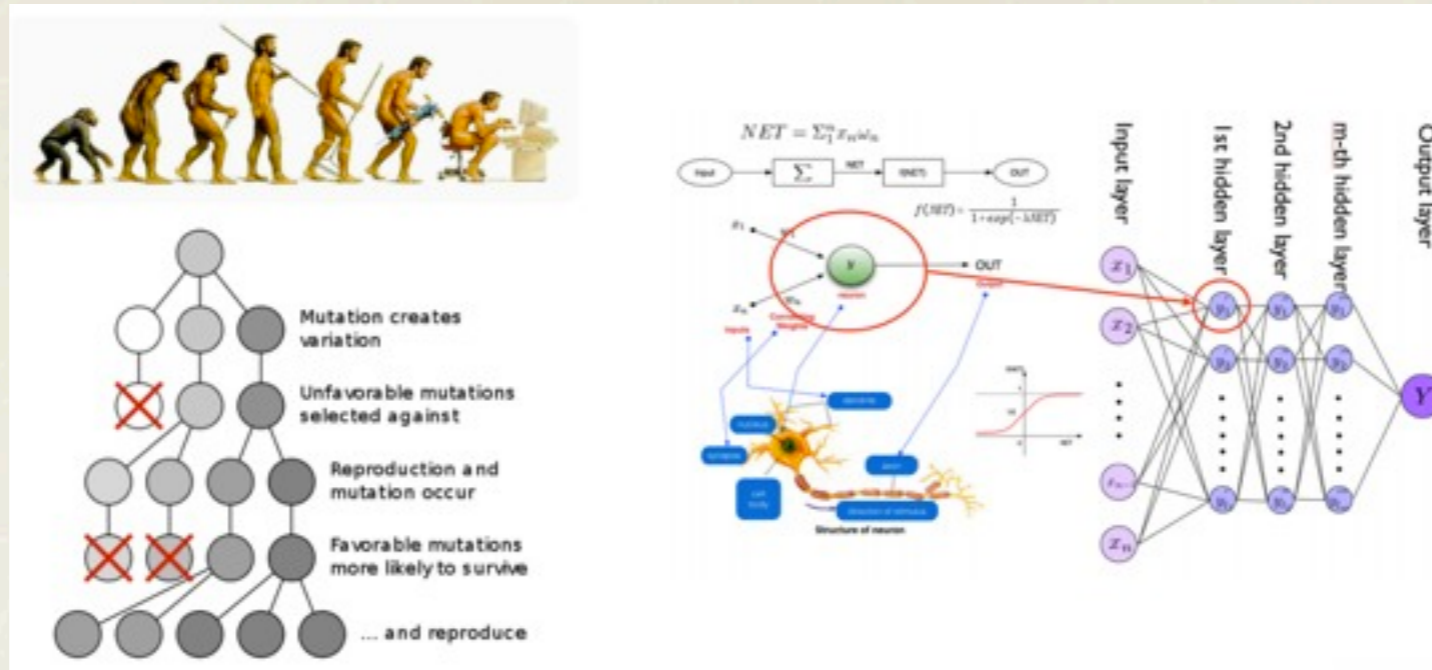


T.Yamamoto

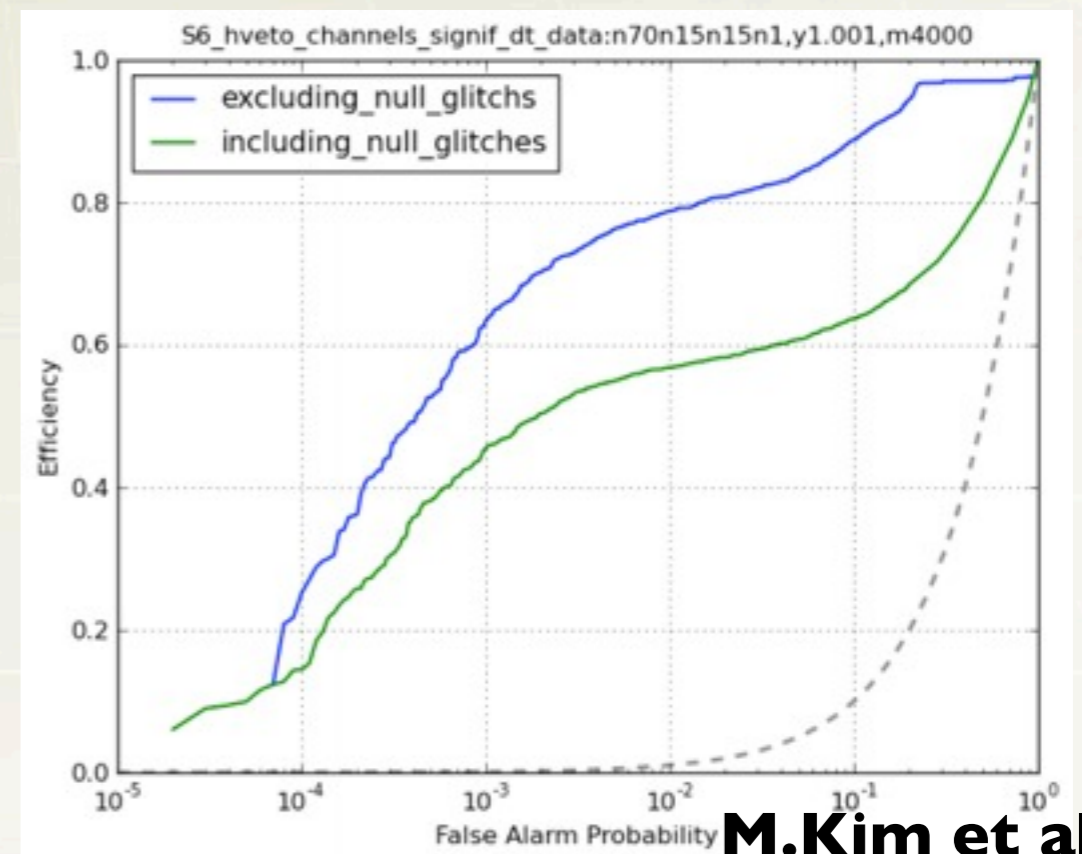
H.Yuzurihara

(2012-9-19)

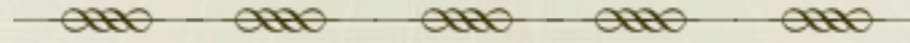
**Artificial Neural Network based.
Genetic Algorithm included.**



K.Kim et al.



M.Kim et al.



- **Affinity propagation based**
- **Too many classes for now**

