

# **Report on KAGRA detector characterization**

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**on behalf of detector characterization group**

# DetCharプロジェクト

Primary projectとSpecial projectに分け、P-が本筋で、S-は短期的または本筋に入れるために検討するプロジェクト。P-を優先して進め、S-は適時チームを結成して進める。

各プロジェクトにリーダーを配置し、中心になって進める。

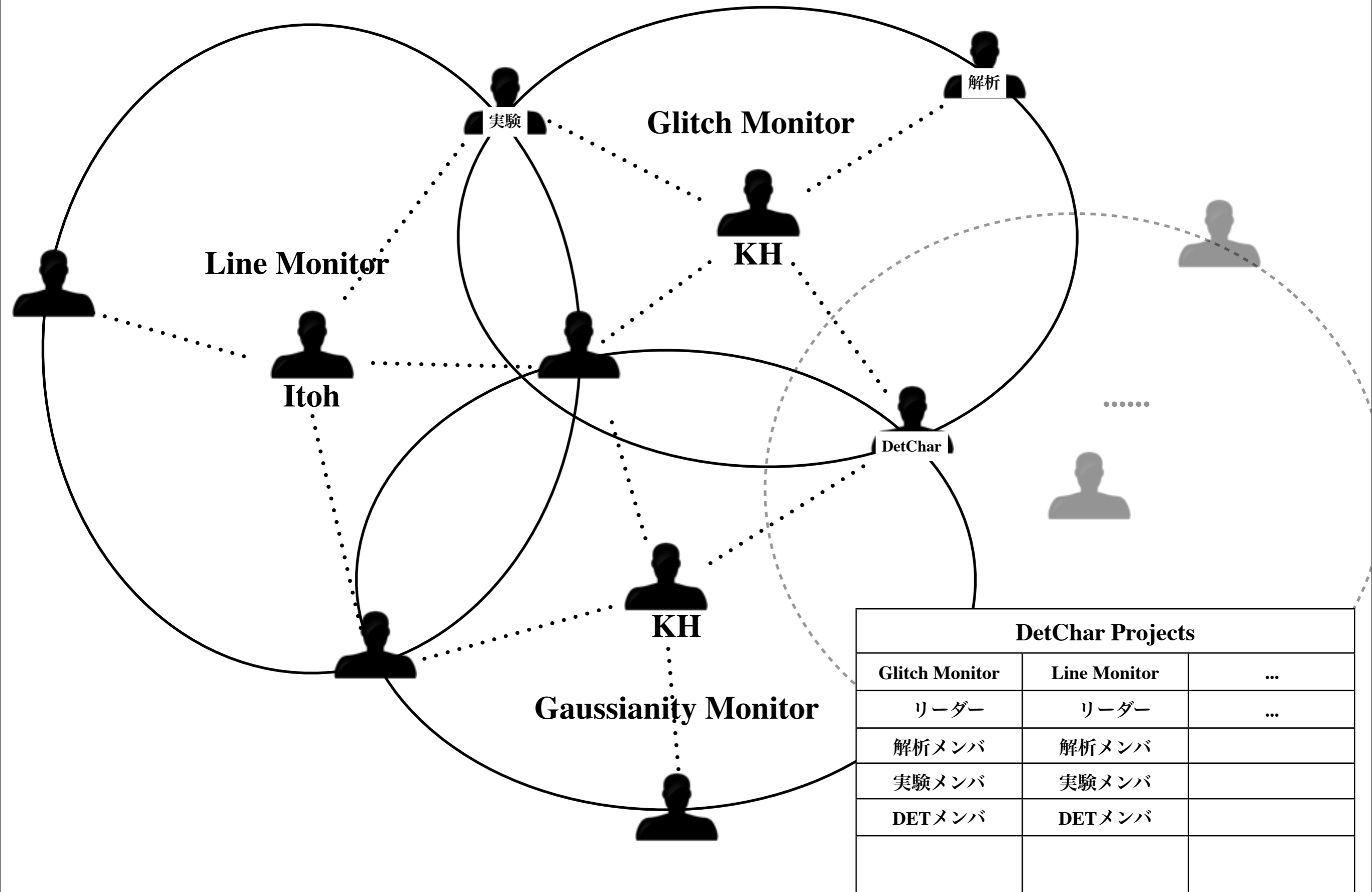
## Primary Projects

- Detcharシステムの構築(incl. web-based)
- Glitch Monitor (Hayama)
- Line Monitor (Itoh, Kokeyama)
- Gaussianity Monitor (Hayama)
- Noise Budget(Hayama, Miyakawa)
- Health Monitor
- Data base
- Quality flag(Hayama, Tasyumi)

## Special Projects

- Globally correlated noise (Nishizawa, Hayama, ...)
- Violin mode
- Multi-Channel Analysis (with Korea detchar, Mano)
- Observation shift(Hayama)
- Newtonian Noise(Agatsuma)

# 開発体制の整備



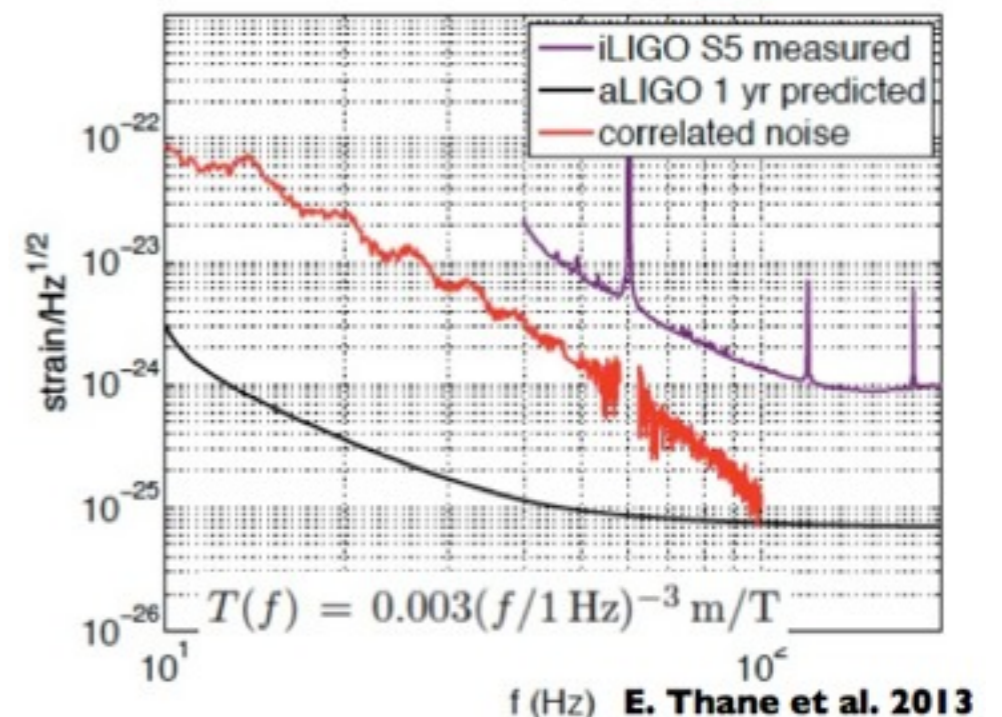
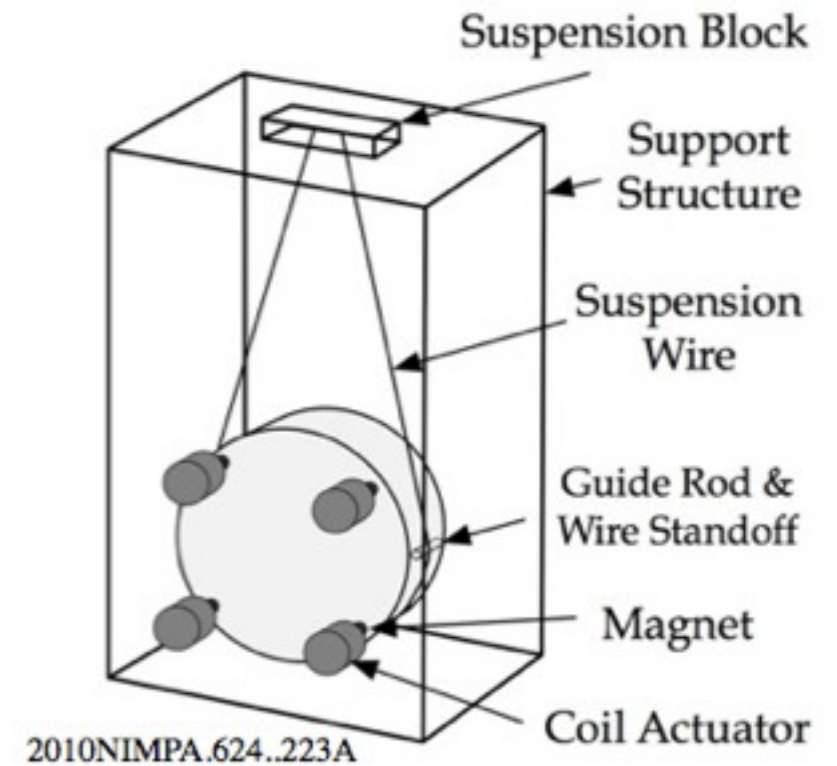
DetChar Projects		
Glitch Monitor	Line Monitor	...
リーダー	リーダー	...
解析メンバ	解析メンバ	
実験メンバ	実験メンバ	
DETメンバ	DETメンバ	

# Measurement of the magnetic fields at KAGRA site



## ○ Motivation

- KAGRA will use Magnet-Coil actuator to control mirrors.
- A criteria for current plan of arrangement of magnets is  $\sim 10\text{pT}$  @ low frequency
- Non stationary noise caused by the magnetic disturbance.
- Schumann resonance may limit the sensitivity of SGWB search below 100z. We have to know the case of KAGRA. Firstly to know the transfer function of M from outside to inside.
- Data taking for developing multi-channel analysis. Collaboration with Korea



# Measurement of the magnetic fields at KAGRA site



We will measure the magnetic fields in 21-25 October

- **Lots of advise from Yamamoto, Sekiguchi, Araya, Kanda, Ando, Takahashi, ...**
- **Participants: Uchiyama, Miyakawa, Hayama, Ono, Yano**
- **Study on the environmental magnetic field at KAGRA site. Getting data which can deicide the configuration of a coil-magnet actuator which controls a mirror.**
- **To obtain transfer function of the magnetic fields outside to inside in order to know influence of Shumann resonance.**
- **To see whether our magnetometers are enough sensitive to measure the environmental magnetic field or not. If the data is occupied by internal noise of the magnetometer, we need to have better magnetometer.**
- **To get several PEM data (magnetic fields and accelerometer)**

# Current status



- **[Done] To specify where we measure the magnetic fields**
- **[Done] To get two magnetometers.**
- **[Done] To get two data loggers with enough channels**
- **[Partial] To test the magnetometers**
- **[No] To test the data loggers**
- **[No] High pass filter**
- **[No] checklists for the measurement**
- **[No] End-to-end test**