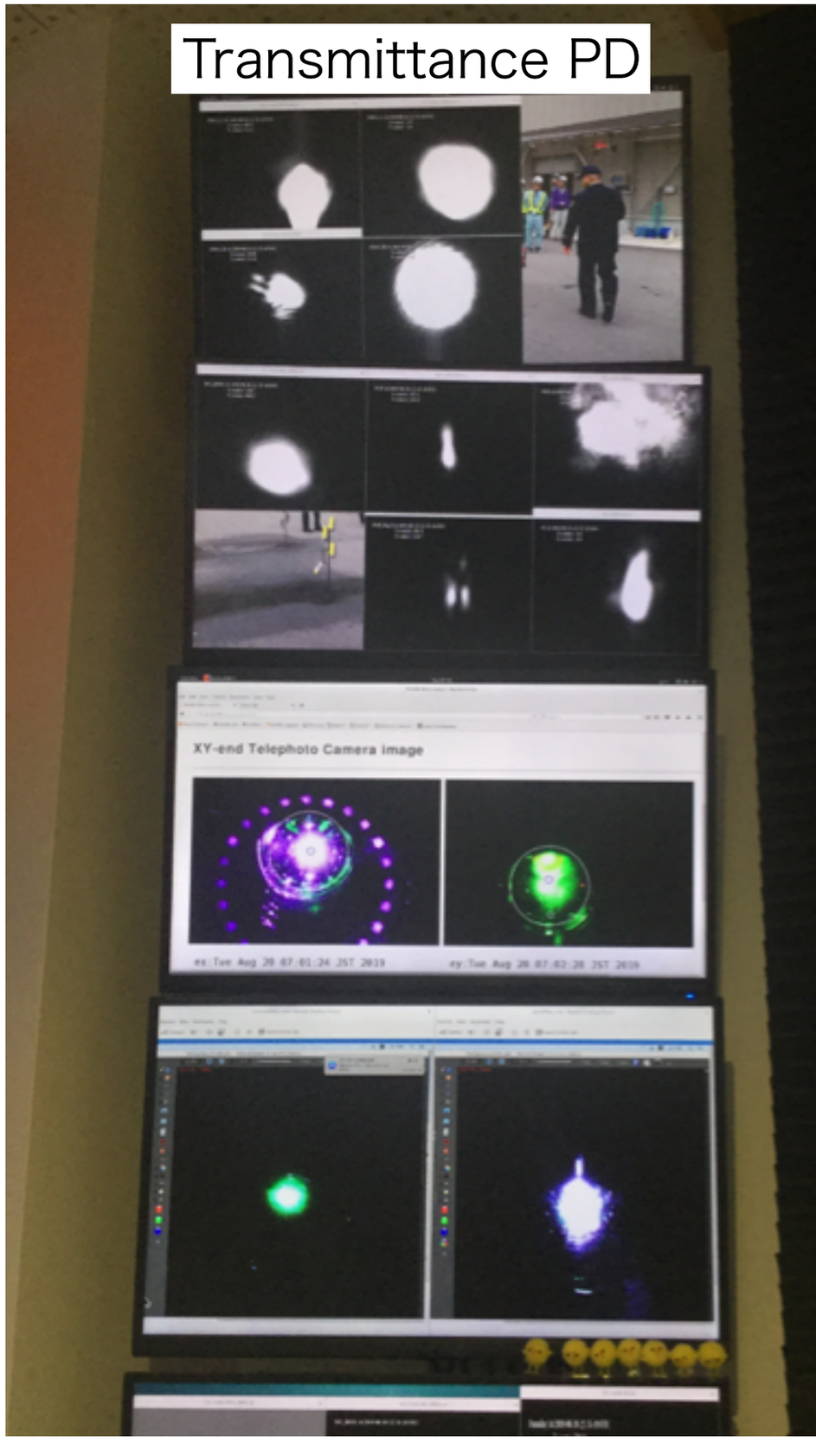
PEM meeting brief reports

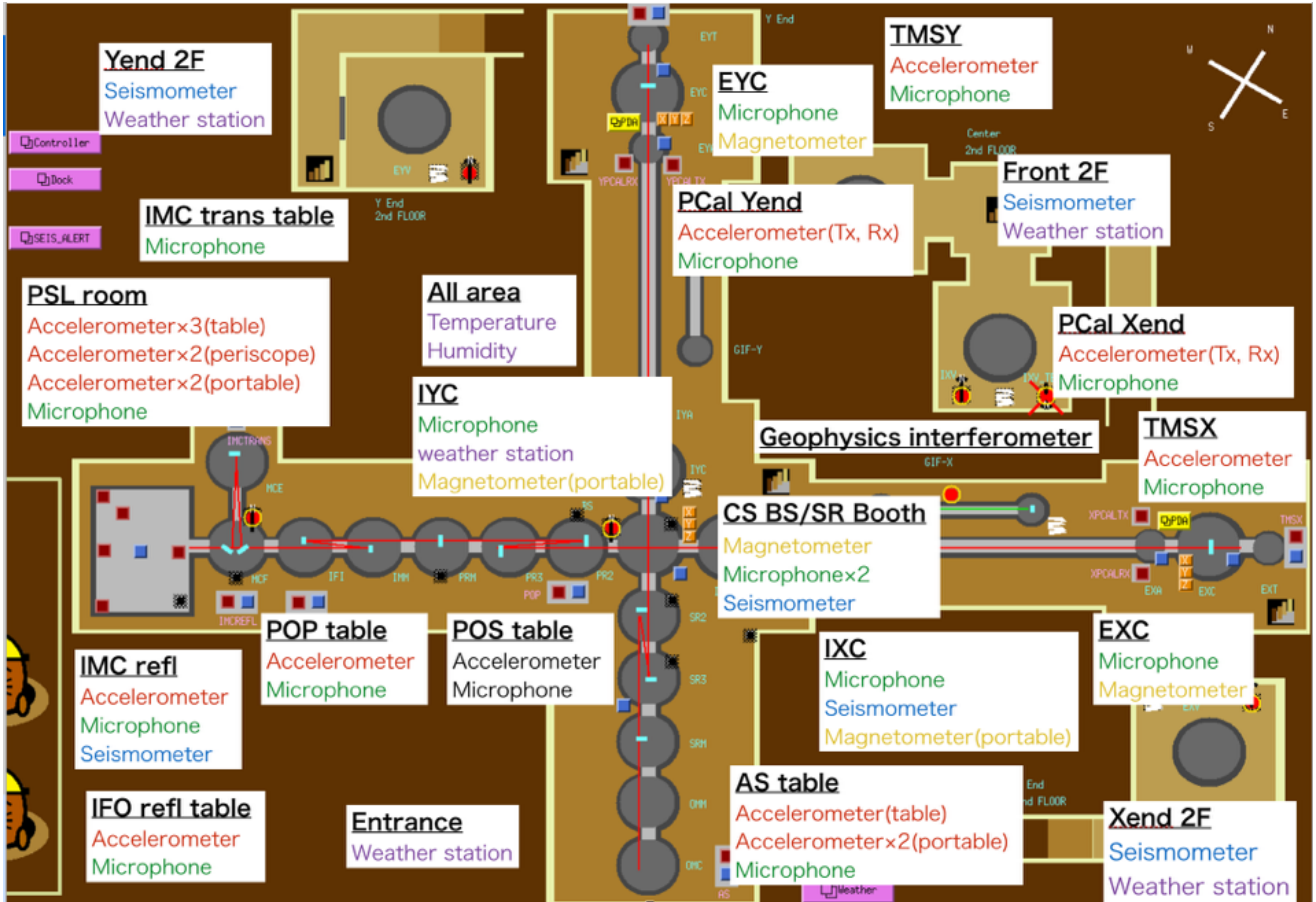
VK PEM meeting
2019/08/20 T.Yokozawa

Detector status

- We are in the commissioning phase of the Fabry-perot michelson
- Detector configuration will be determined soon
  - DRFPMI or SRFPMI or FPMI
- Discussing about following tasks and groups
  - Suspension damping
  - Length sensing
  - Alignment sensing
  - Noise hunting
  - Output mode cleaner



PEM status


Yend 2F
Seismometer
Weather station
Controller
Dock
SEIS_ALERT
IMC trans table
Microphone
PSL room
Accelerometer×3(table)
Accelerometer×2(periscope)
Accelerometer×2(portable)
Microphone
All area
Temperature
Humidity
IYC
Microphone
weather station
Magnetometer(portable)
EYC
Microphone
Magnetometer
TMSY
Accelerometer
Microphone
PCal Yend
Accelerometer(Tx, Rx)
Microphone
Front 2F
Seismometer
Weather station
PCal Xend
Accelerometer(Tx, Rx)
Microphone
Geophysics interferometer
TMSX
Accelerometer
Microphone
CS BS/SR Booth
Magnetometer
Microphone×2
Seismometer
POP table
Accelerometer
Microphone
POS table
Accelerometer
Microphone
IMC refl
Accelerometer
Microphone
Seismometer
IXC
Microphone
Seismometer
Magnetometer(portable)
EXC
Microphone
Magnetometer
IFO refl table
Accelerometer
Microphone
Entrance
Weather station
AS table
Accelerometer(table)
Accelerometer×2(portable)
Microphone
Xend 2F
Seismometer
Weather station
Weather

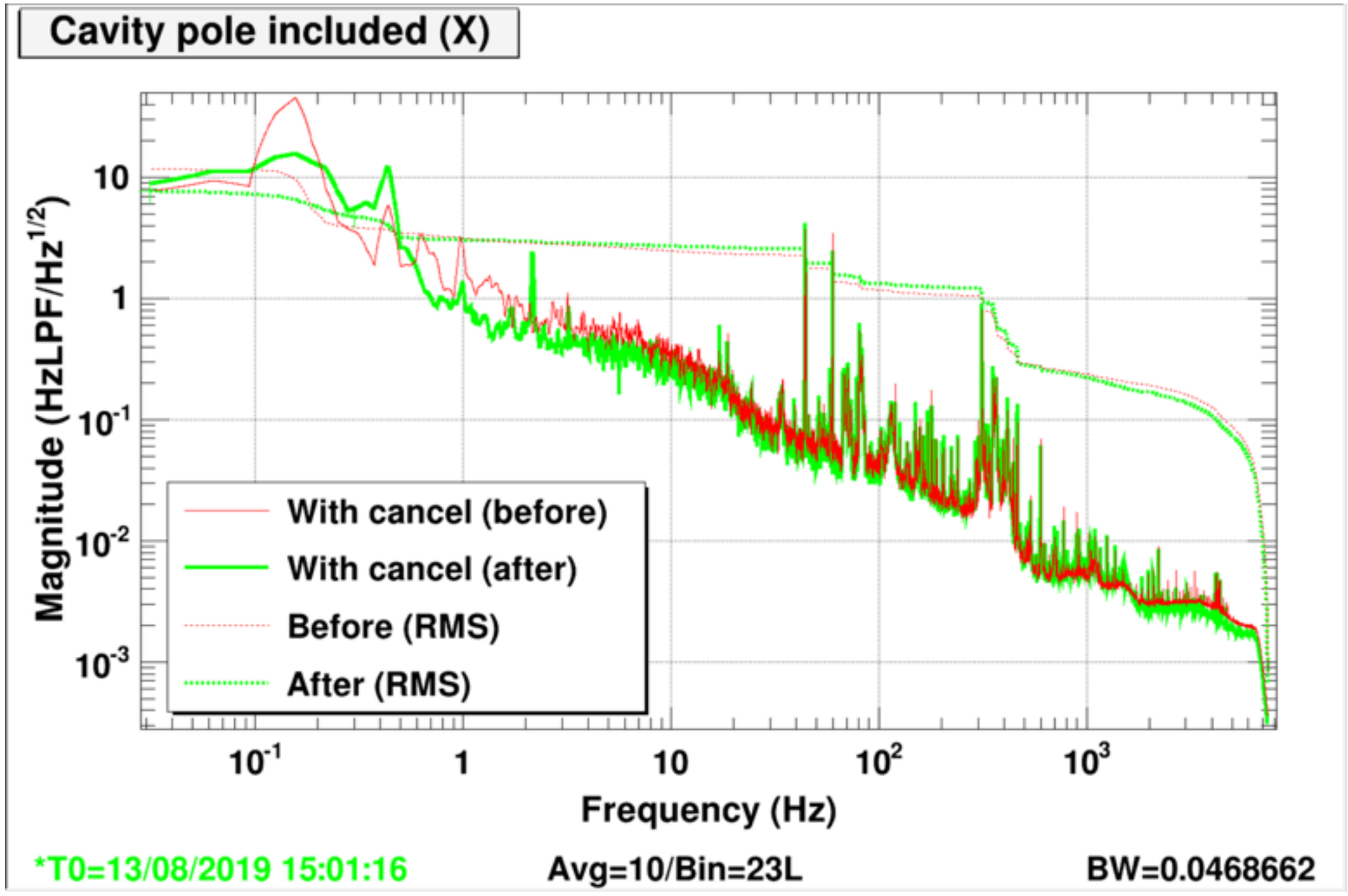
PEM status

http://gwwiki.icrr.u-tokyo.ac.jp/JGWwiki/KAGRA/Subgroups/PEM

- Portable PEM project(Last month meeting)
- Origin of the line noise search(next page)
- Vibration characteristics (Cryo-chamber, Photon calibrator, …)
- Origin of the Glitch search(w/ detchar group)
- Sound reverberation time analysis(Main topic today)
- Seismic motion analysis
- Lock loss analysis using PEMs
- Preparing toward the PEM injection

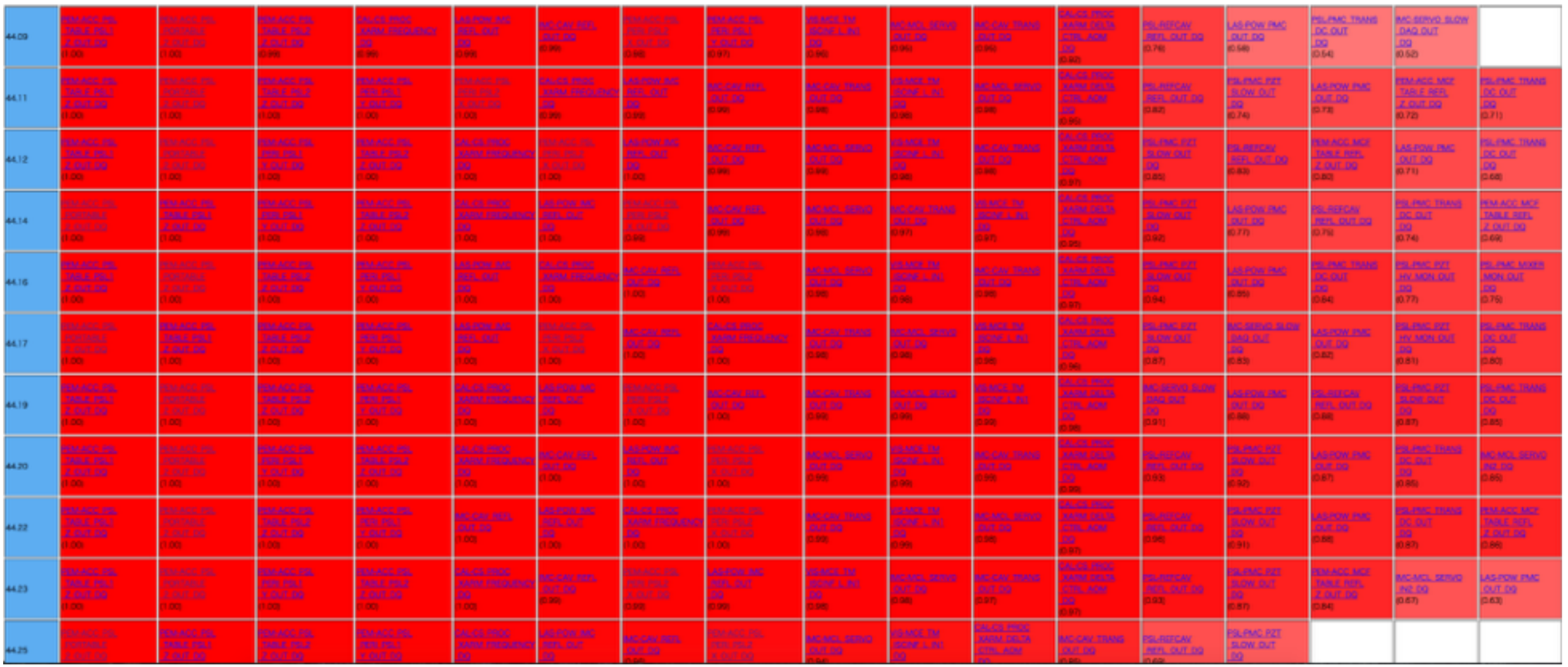
- Today topic
  - Virgo status and October commissioning(Irene)
  - Plan to visit Virgo (Washimi)

Line noise



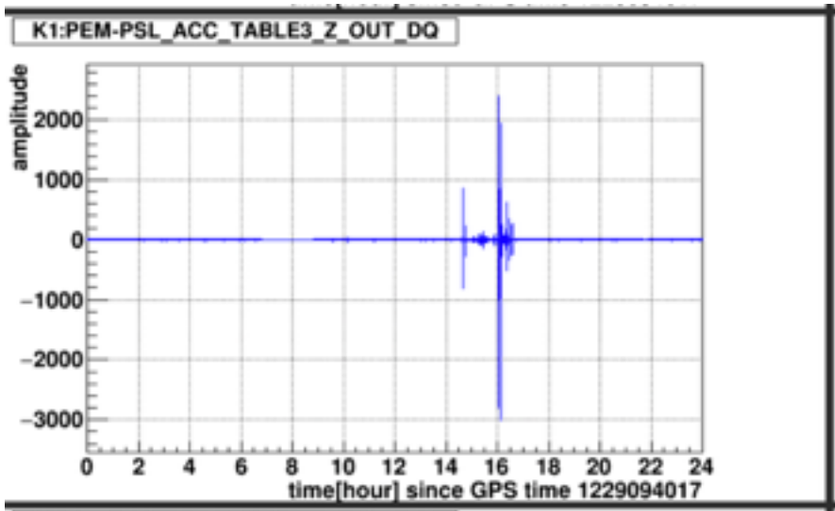
- We found some mysterious peak around 44Hz…

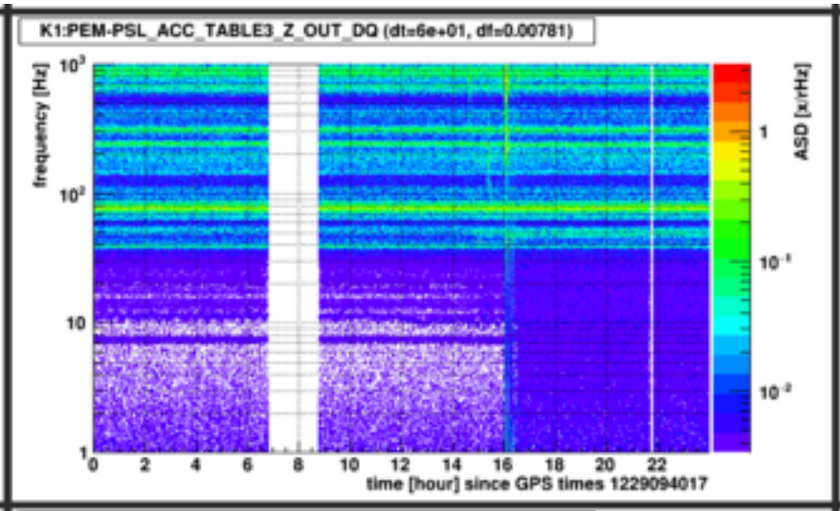
Line noise

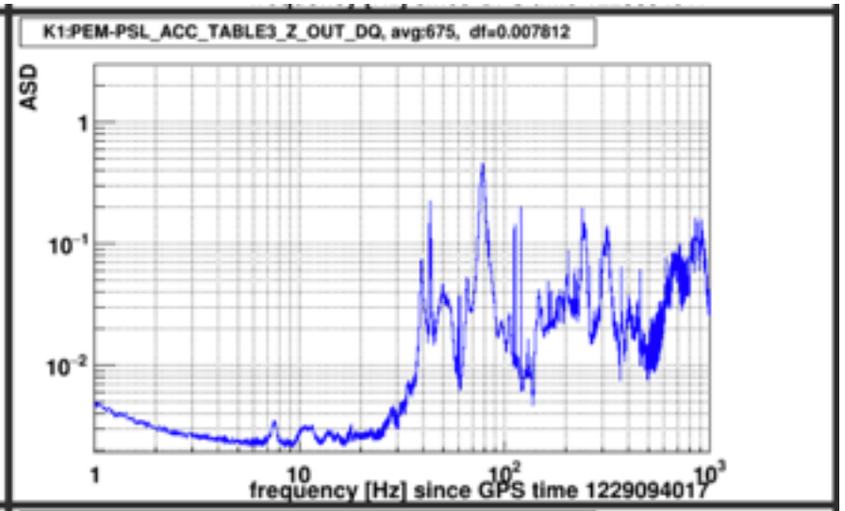


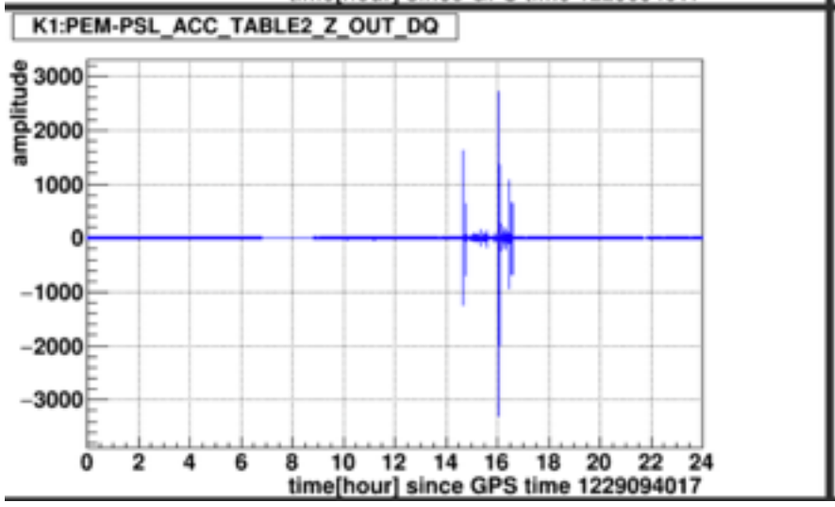
- This 44Hz noise has many coherent channels
- Large coherent channels are accelerometers in the PSL room

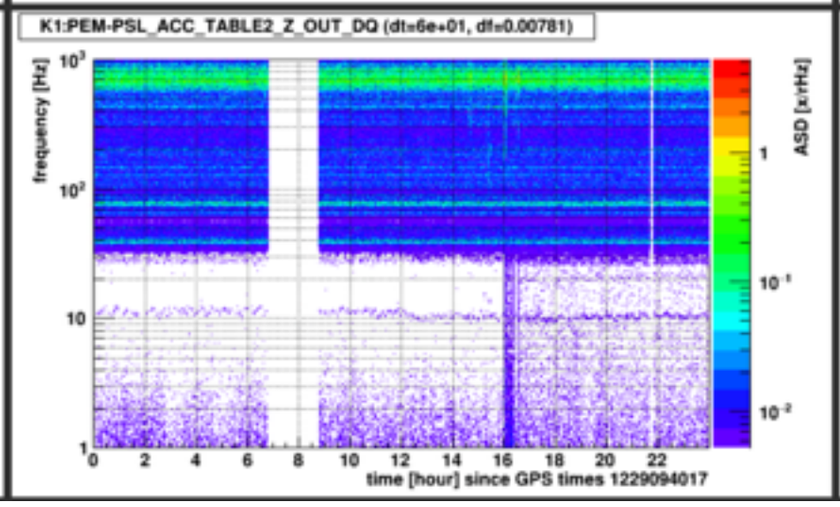
Line noise

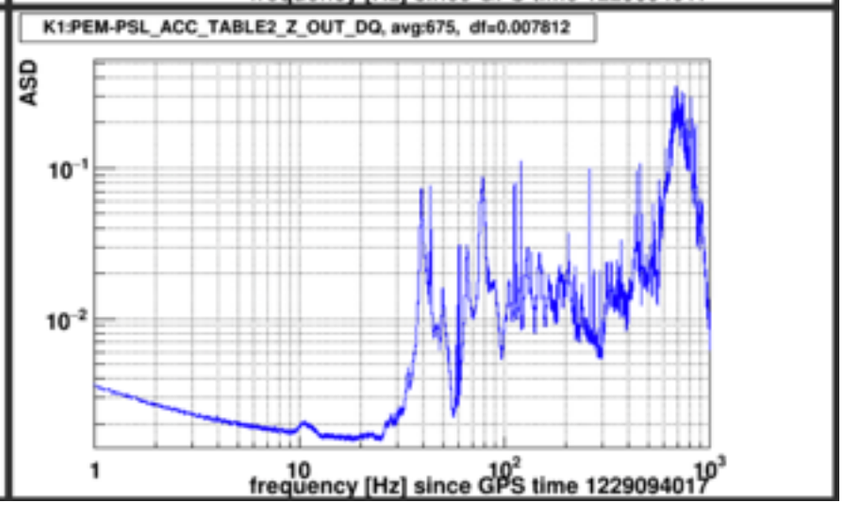






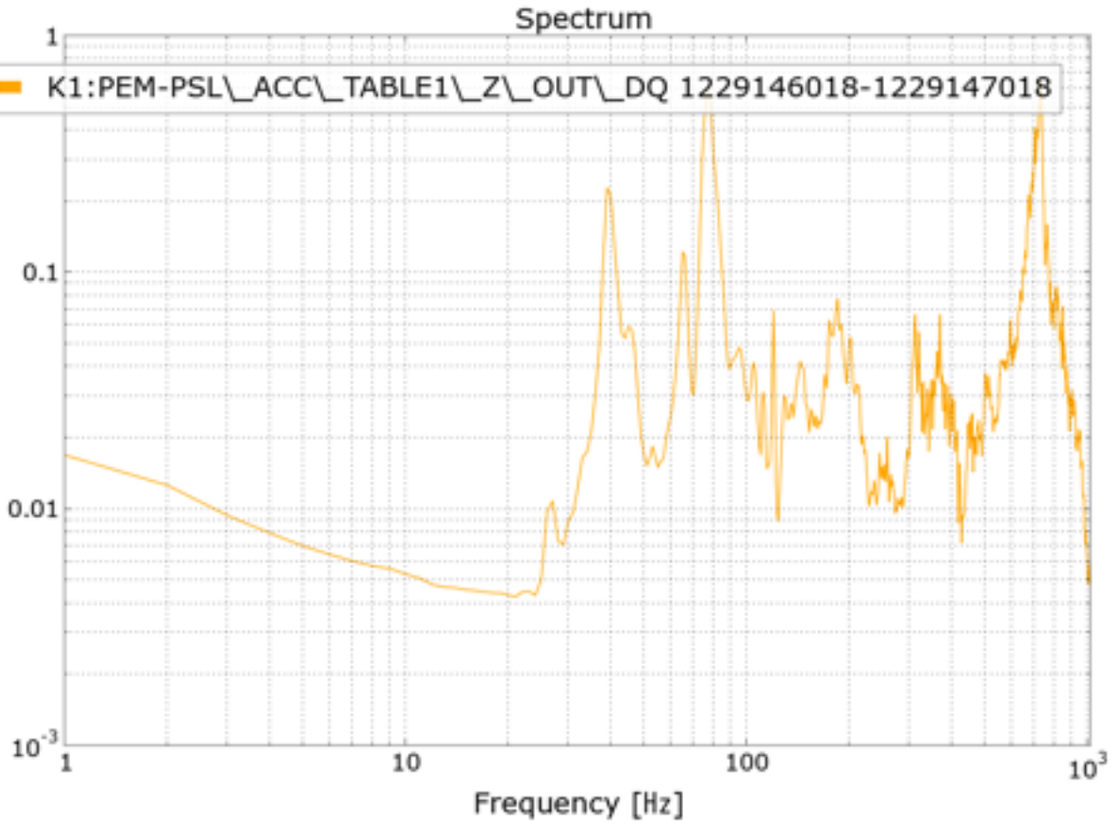


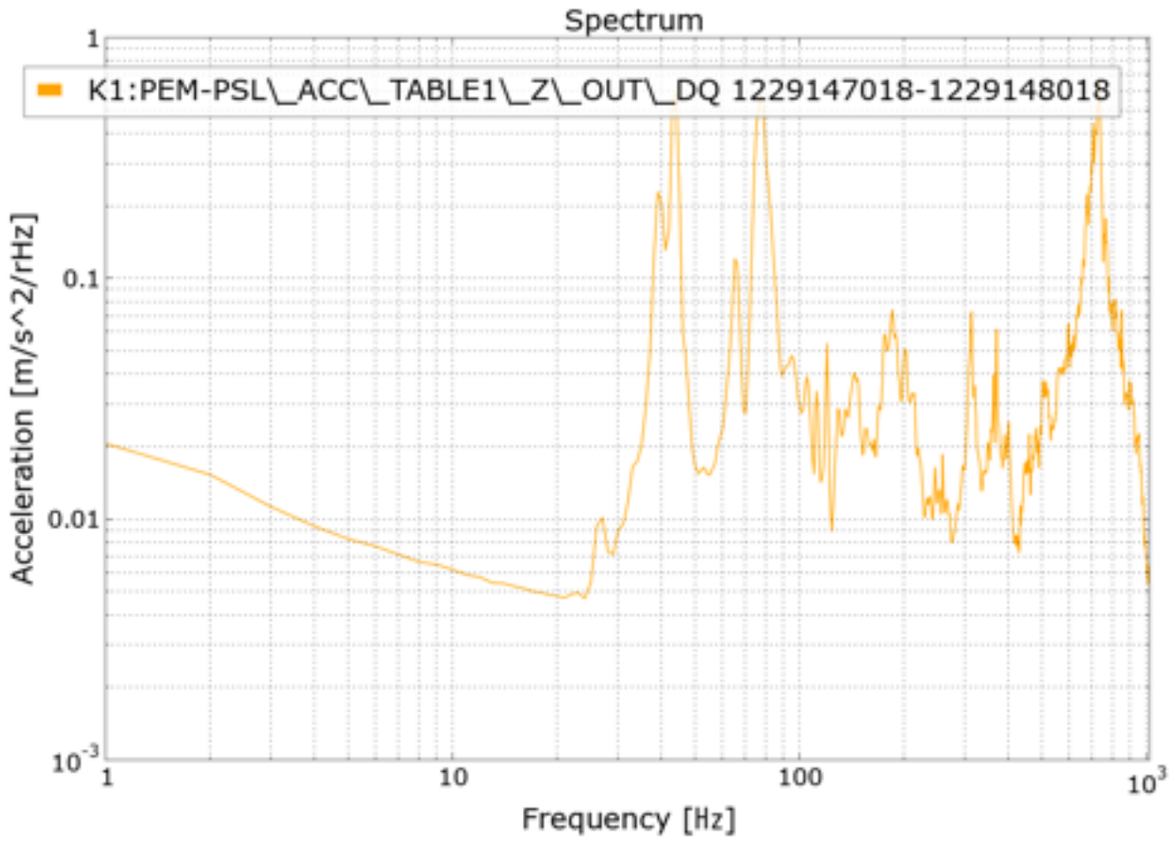




- We found this peak suddenly appeared at the Dec.18th, 2018
- Used Yuzu summary page https://www.icrr.u-tokyo.ac.jp/~yuzu/bKAGRA_summary/html/20181218_PEM.html

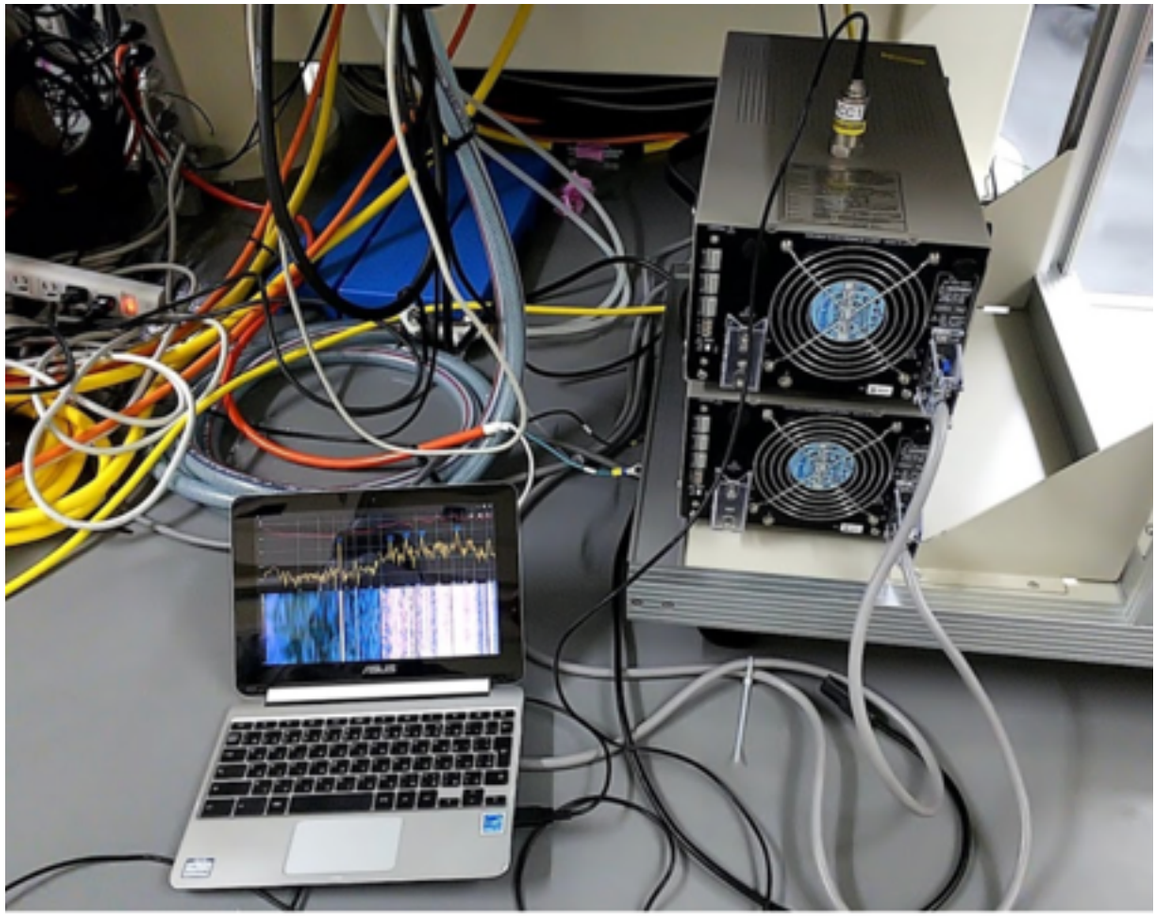
Line noise

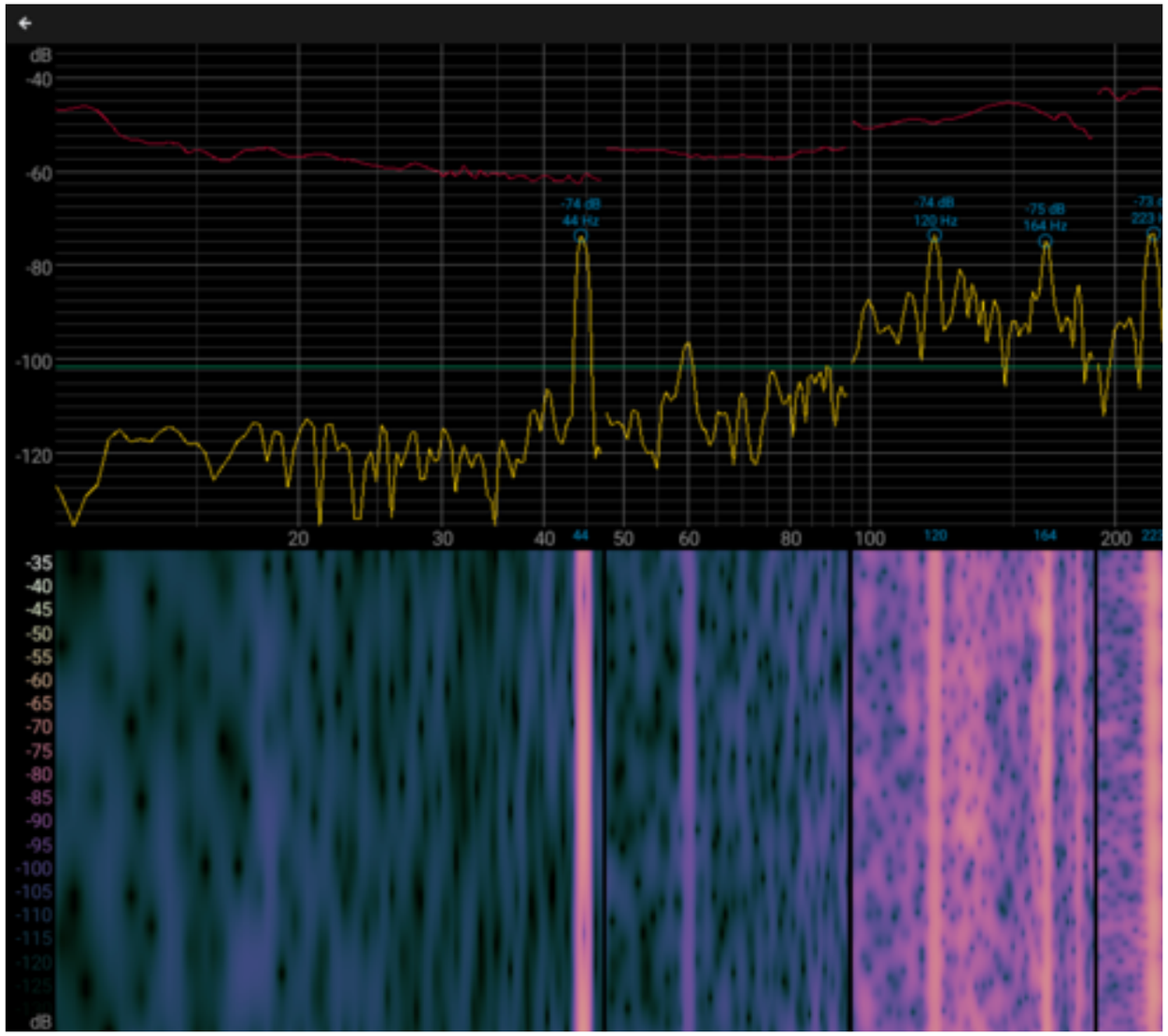




- I can identify this peak suddenly appeared 14:49 18th Dec. 2018
- Used Kozapy spectral
- No specific news from KAGRA klog http://klog.icrr.u-tokyo.ac.jp/osl/

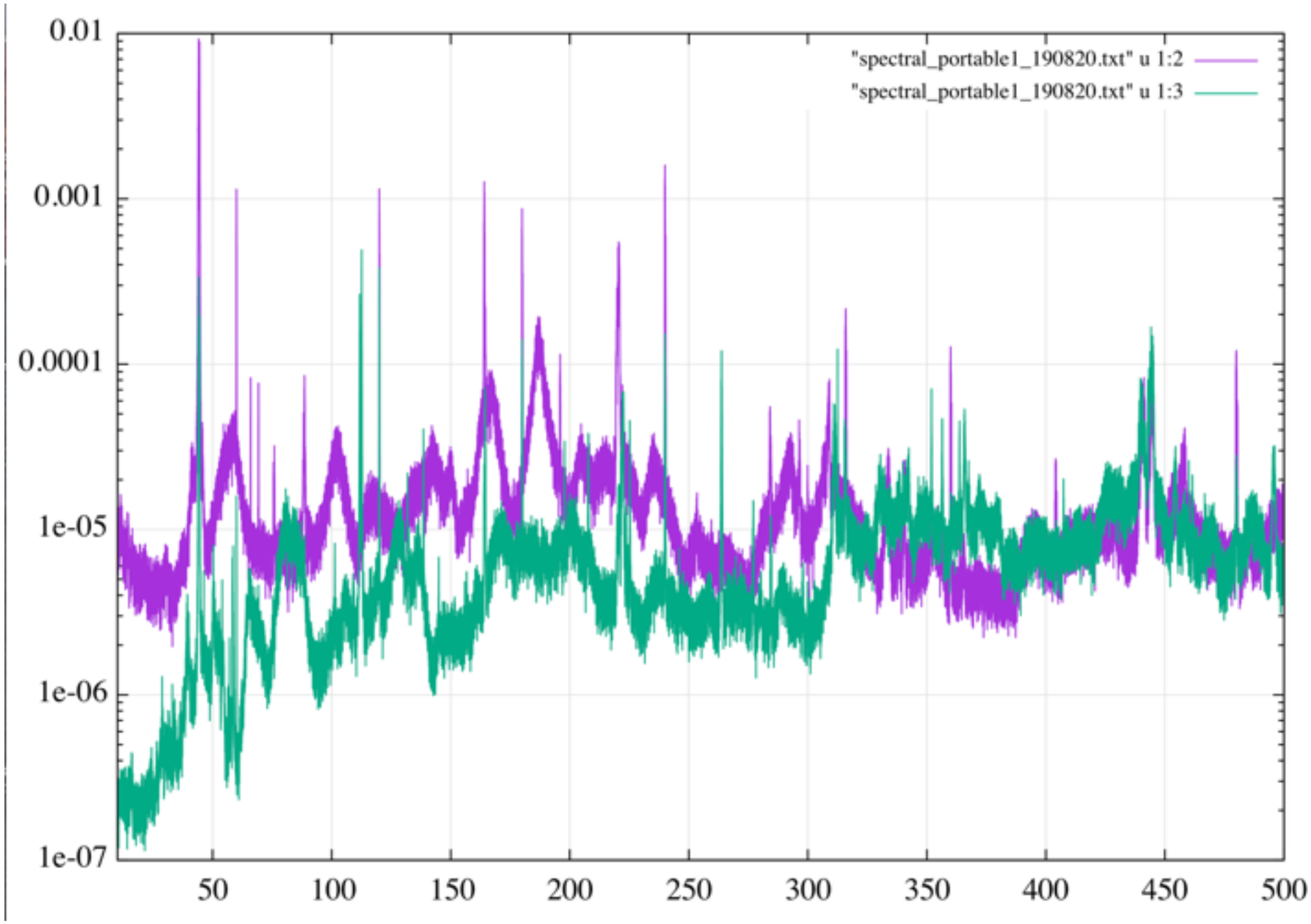
Line noise





- We found it inside the PSL room
- There is no clear vibration path to the optical table

Line noise



- Set a portable accelerometer and check lines now