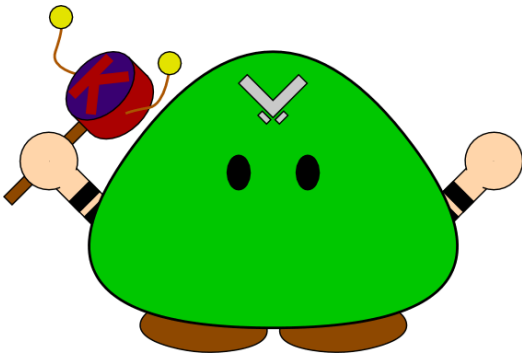


# GWADW 2014



Kagra-chan

Kentaro Somiya  
on behalf of everyone

# Summary of the workshop

- 134 participants (new record for GWADW!)
- 31 posters (new record for GWADW!)
- KAGRA/CLIO/SK tours
- Remarkable progresses

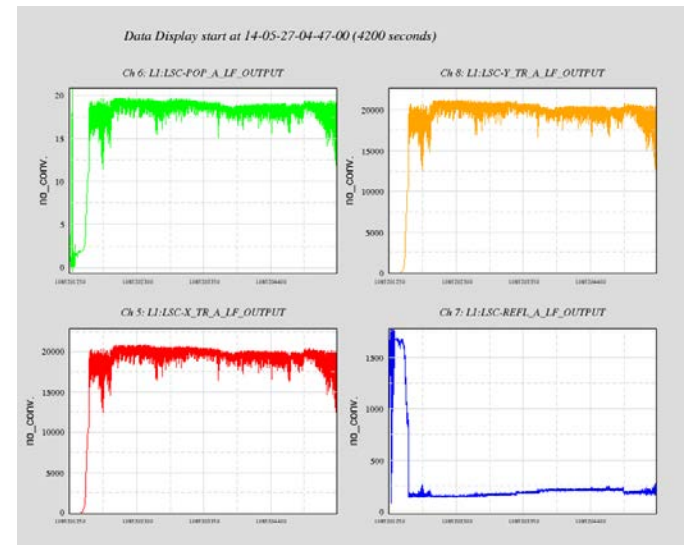


# Progresses since the last year

1. KAGRA tunnel complete!
2. Quantum RPN simulation in FINESSE/MIST!
3. Nearly SQL-limited IFO with a 5mg mirror!
4. Less broken cables
5. CMB/PTA

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- 6. Full RSE locked in LLO!**



# Progresses since the last year

**aLIGO LLO Logbook**  
Logbooks LHO LLO

SEARCH TASKS

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Links

Reports until 01:29, Tuesday 27 May 2014

L1 ISC

denis.martynov@LIGO.ORG - posted 01:29, Tuesday 27 May 2014 - last comment - 19:27, Tuesday 27 May 2014(12762)

full ifo is stably locked

Anamaria, Rob, Ryan, Den

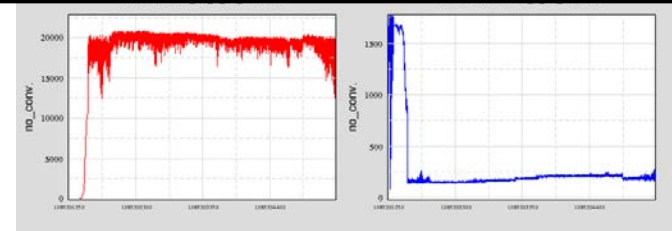
Tonight we locked full ifo for 1 hour

Attached plot "DARM" shows DARM spectrum. It is pretty noisy and dominated by MICH sensing noise at the frequencies 8-100 Hz. DRMI is still locked on 3f, AO is also not enabled and DARM is not transitioned to OMC DC yet. Calibration was done by crossing error signal with control at 25 Hz (measured UGF). We assume DARM pole to be at 400 Hz.

Here is what we did:

1. Aligned XARM and YARM using REFL WFS
2. ALS COMM -> IMC Length with bandwidth of 70 Hz
3. ALS DIFF -> ETMX, ETMY with bandwidth of 15 Hz
4. Found arm resonances and offset ALS COMM by ~500 Hz
5. Locked DRMI on 1f and transitioned to 3f
6. At CARM offset of 0.3 nm (-5 cnts in TR\_CARM filter bank) transitioned CARM from ALS COMM to  $\sqrt{\text{TRX}+\text{TRY}}$ , ALS COMM was turned off completely
7. Run z servo to correct ALS DIFF DC by servoing AS45Q to zero mean
8. At CARM offset of 0.1 nm enabled QPD servos and adjusted the offsets to zero WFS AS45Q pitch and yaw signals
9. At CARM offset of 70 pm transitioned DARM from ALS DIFF to AS45Q normalized by  $\sqrt{\text{TRX}}$
10. At CARM offset of 5 pm transitioned CARM from  $\sqrt{\text{TRX}+\text{TRY}}$  to REFL9I / TRY with offset 0.25 cnts

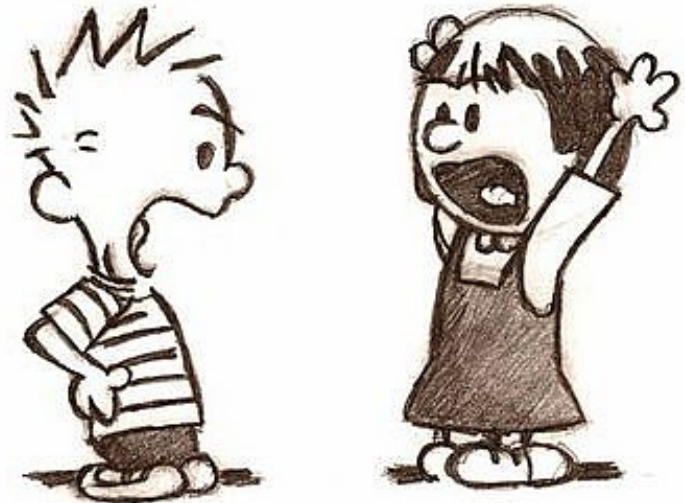
<https://alog.ligo-la.caltech.edu/aLOG/index.php>



# Talks

Hard for me to decide which talks were interesting.

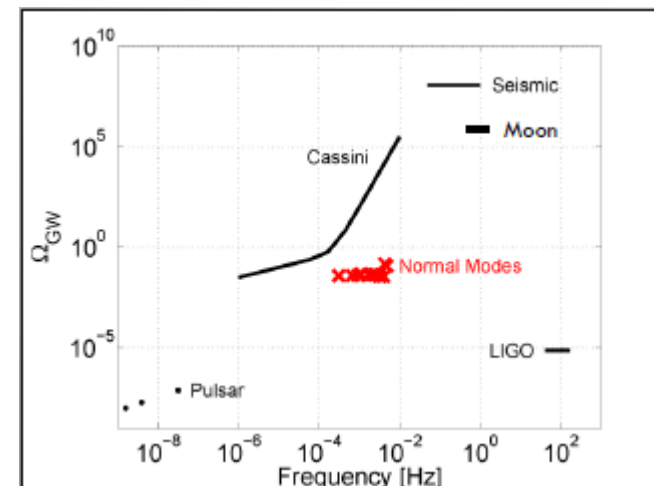
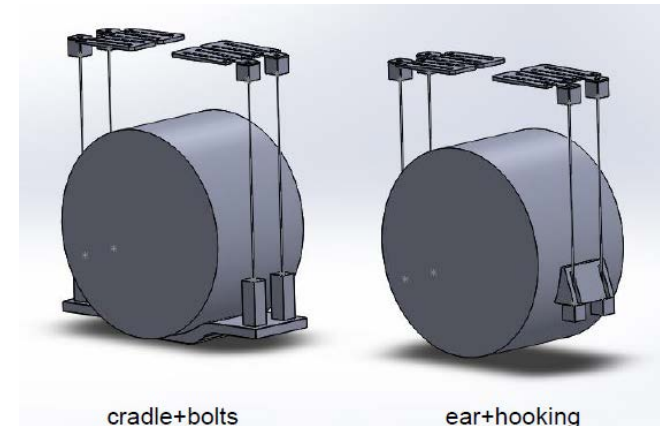
>> Sorted the talks by the number of questions/comments.



# 5-question talks



- Carrier density noise (D.Heinert)
- Sapphire mirror (E.Hirose)
- Filter cavity (J.Miller)
- Earth GW detector (J.Harms)



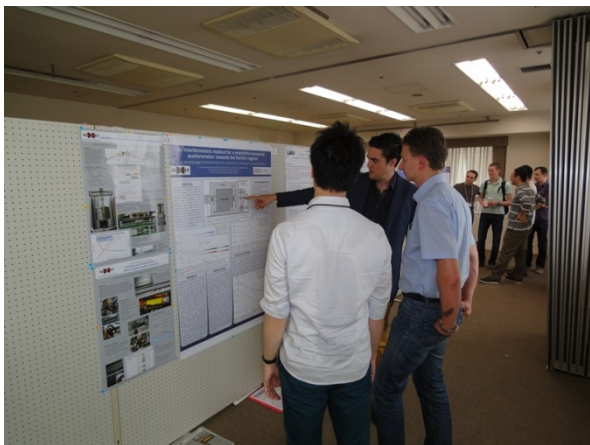
# 4-question talks



- Non-equilibrium TN (L.Conti)
- Simulation in aLIGO commissioning (K.Kokeyama)
- Coating noise measurements (I.Martin)
- Dark matter search (V.Frolov)
- NSF strategic planning consideration (M.Coles)
- CHRAC (A.Alloca)



# KAGRA tours/poster session



# Important parts of workshop

# Dinners/Breaks



GWADW in Elba (2011)

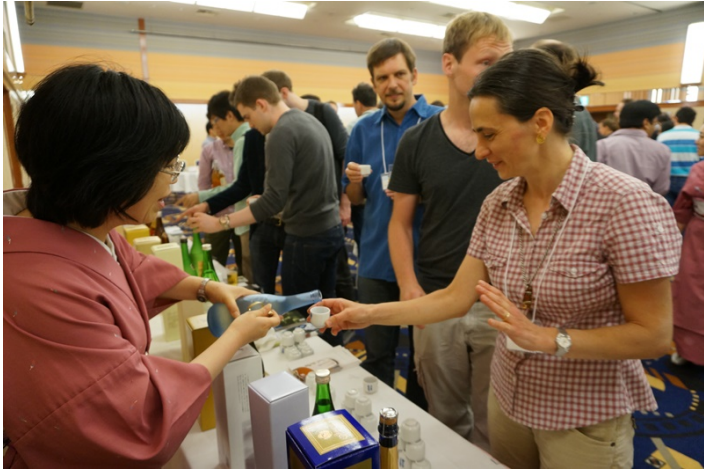
- All the dinners were served in the conference hotel (Elba-style).
- Local sweets at the coffee breaks.



GWADW in Takayama (2014)



# Experiences of Japanese culture



LIGO vs GEO



LIGO vs Virgo



Karaoke night



# Sightseeing in Takayama



# Acknowledgement

**All the participants!**

**Science Organization committee (incl. Syd and Francesco)**

**Conveners/Chairs**

**Local Organizers (Kuroda, Ohishi, Tatsumi, myself)**

**Secretaries (Kikuchi, Takayama)**

**Special supports (Maeda)**

**Support students (Kato, Konisho, Kumeta, Nakano, Yano,  
Chen, Katayama, Okutomi, Suemasa)**

**Tour guides (Kokeyama, Ando, Agatsuma, Arai, Kawazoe,  
Sato, Takahashi, Matsumoto, Akutsu, Izumi,  
Miyakawa, Uchiyama, Kawamura, Nakano)**

**Thank you very much!!**



# GWADW 2014 in Takayama



**See you in Alaska for GWADW 2015!!**