ITF Status
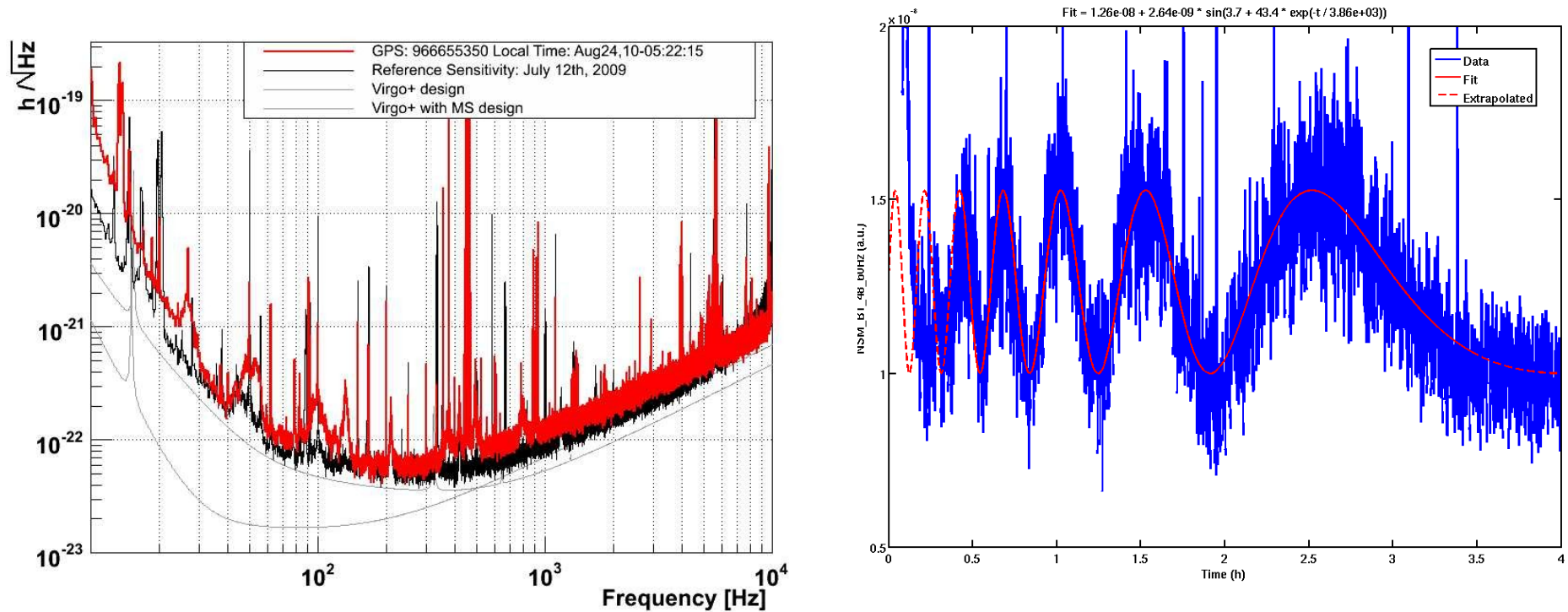
Bas Swinkels for the commissioning crew

Last week overview

- Run is going smooth:

    - Science mode duty cycle > 80%

    - Several locks lasting more than a day

    - Horizon fluctuating between 6 and 8 Mpc

- Only real problem related to TCS on Sunday night

    - NI laser switched off by safety circuit, threshold too low?

    - Lost half a day due to usual locking/alignment problems
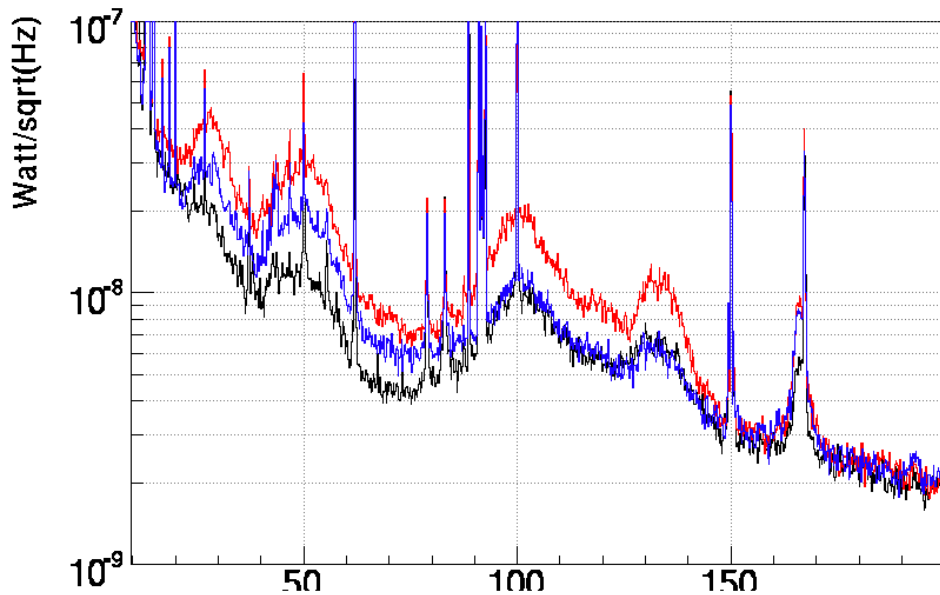
    - Power stabilization still off

Diffused light detection tower

- Bumps around 30, 50, 100 and 130 Hz

- Modulated in time like 'etalon fringes'

- Well predicted by diffused light projection using SETODE

- Very sensitive to alignment of detection bench
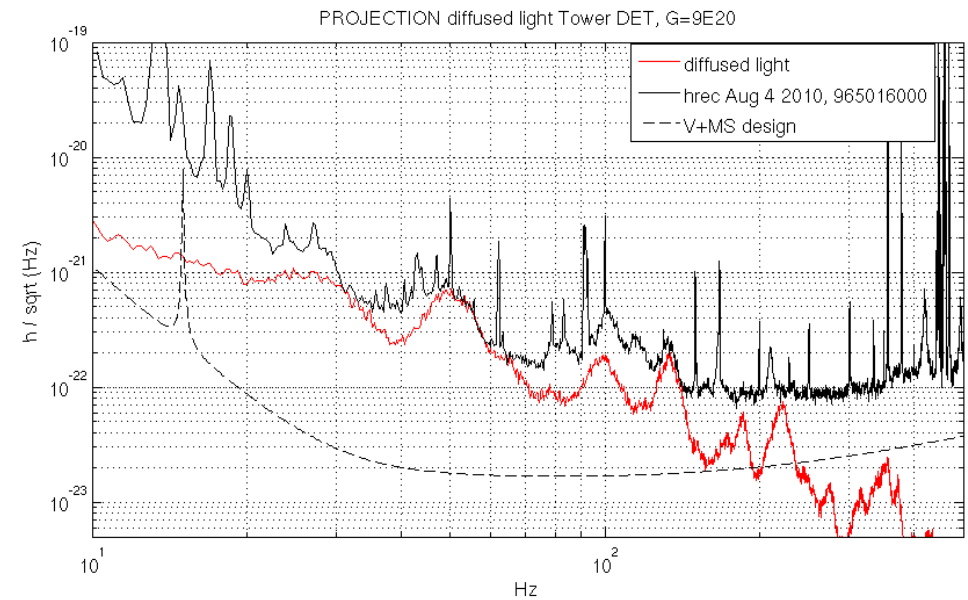
Diffused light detection tower

V1:Pr_B1_ACp__FFT

966097494.0000 : Aug 17 2010 16:24:39 UTC
966096285.0000 : Aug 17 2010 16:04:30 UTC
966100776.81 : Aug 17 2010 17:19:21 UTC dt:6.55s nAv:141

PROJECTION diffused light Tower DET, G=9E20
- diffused light
- hrec Aug 4 2010, 965016000
- V+MS design

- Culprits:

  – 27 Hz: HVAC of DAQ room, disappears with switch-off

  – 100 Hz: all electrical machines, maybe fans of DET turbo pump, should be detached

  – 132 Hz: resonance of vacuum tank

Glitches

- See talk Didier

- High frequency: related to value of B1_ACq

  - zeroed using OB_ty, servo made faster

  - switch MICH to B1_ACq still not working

- Up to 20% of triggers caused by 458 Hz violin modes

  - violin notches to be optimized

- Half an hour of data with low glitch rate on Friday (10 Hz -> 2 Hz)

  - Maybe related to B1_d4, not confirmed

  - Should be understood better

Locking

- BETA servo sometimes unstable, switched off for now

    – probably related to DARM gain servo

    – Might be a strange problem in demodulation of 379 Hz line

    – Note: sensitive and horizon based on B1*TF might be wrong when Gain_Darm is wrong

    – Added some extra channels for debugging

- Etalon effect

    – New server added that tracks frequency of butterfly modes

    – Data of last few weeks to be analyzed offline

Commissioning plans

- Play with position of the etalons

- Improve violin notches

- Understand and fix problem with DARM/Beta servos

- Add box around B1 diodes

- Switch MICH to B1_ACq

- More studies of scattered light detection tower?

End