
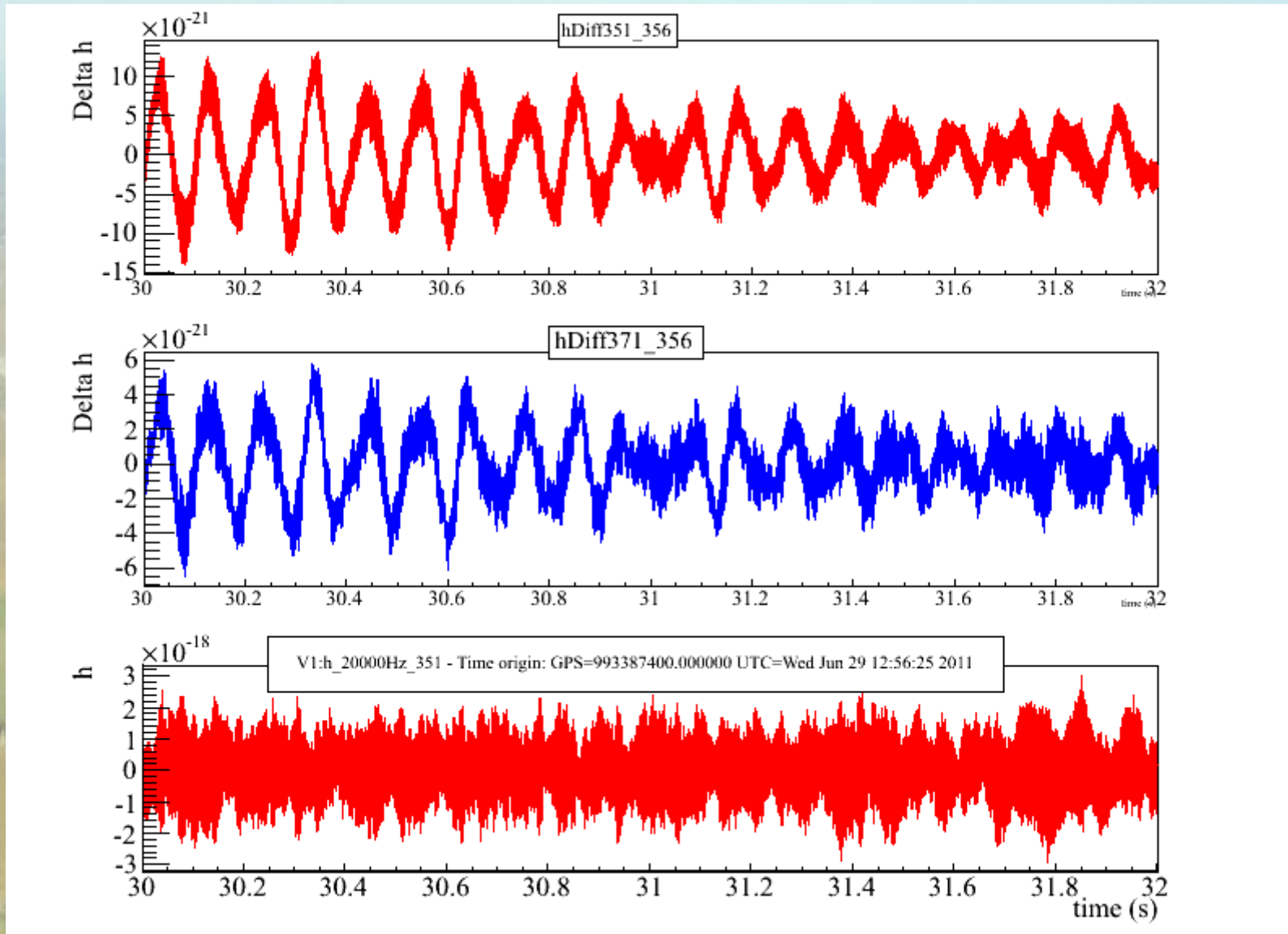


- 
- Virgo calibration status:
- calibration lines moved
 - toward end mirrors in LN2

Vela bump and calibration lines: tests

- ◆ **Non-stationnary bump around Vela frequency (~ 23 Hz)**
 - ◆ linked to non-linearities between calibration lines (~ 356 Hz) and DARM line (379 Hz)
 - tests of hrec with other calibration lines: 351 Hz and 371 Hz
 - try to reduce amplitude of 379 Hz line (on-going)
 - ◆ Data with 3 sets of calibration lines (351 Hz, 356 Hz, 371 Hz)
 - ◆ 993387310, for 10 minutes (June 29th)
 - ◆ offline processing and characterisation of $h(t)$

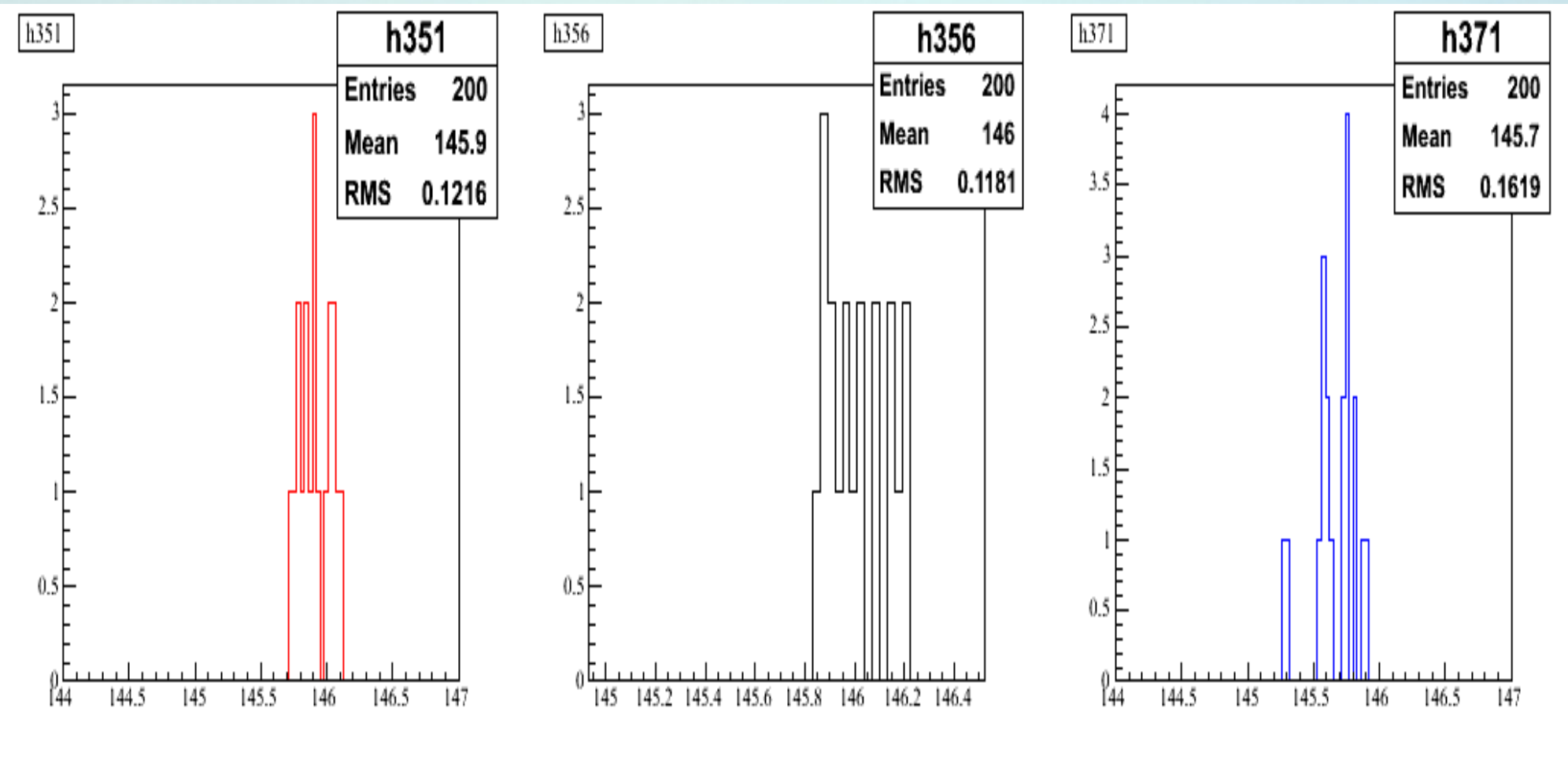
Comparison of the 3 reconstructed $h(t)$



- ◆ $h(t)$ properly reconstructed with the 3 sets of lines (differences lower than 0.5%)



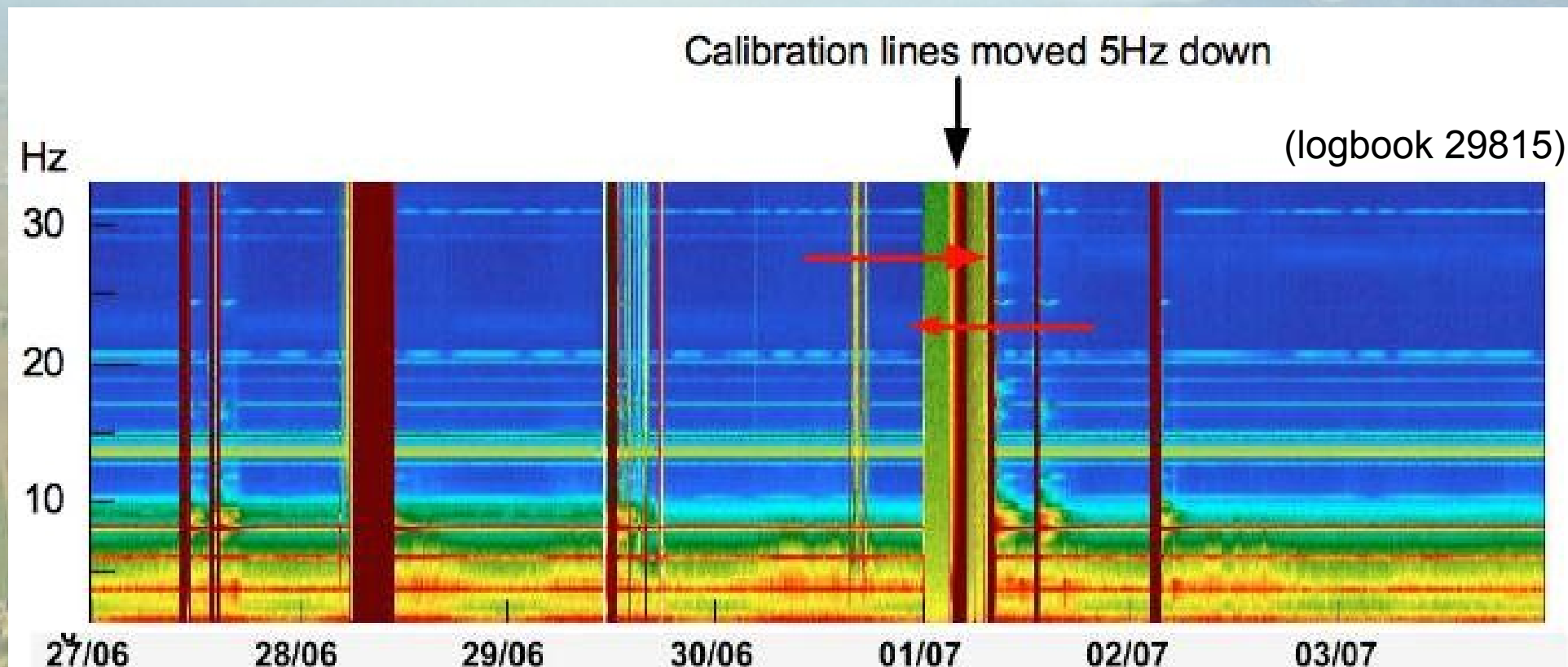
Comparison of the 3 reconstructed $h(t)$



- ◆ **Estimated finesse: larger variations when using 371 Hz line**
 - ◆ as expected since cavity pole is around 167 Hz

Reduce calibration lines frequency by 5 Hz

July 1st, ~10h00 LT (logbook 29794)



- **Bump moved away from Vela frequency**
- **Still in the detection band, around 28 Hz**



Toward using end mirrors in LN2 mode

- ◆ **TF+sensitivity data analysis (Cali/v0r3p15)**
 - ◆ build TFs with tag 'LN1' or 'LN2' in the file name
 - ◆ dataset times in
/virgoData/Cali/ActuatorCalibrationLogs/TFsensitivityData.txt_correct
 - ◆ links /virgoData/Cali/lastTF_LN1.vect (or lastTF_LN2.vect)

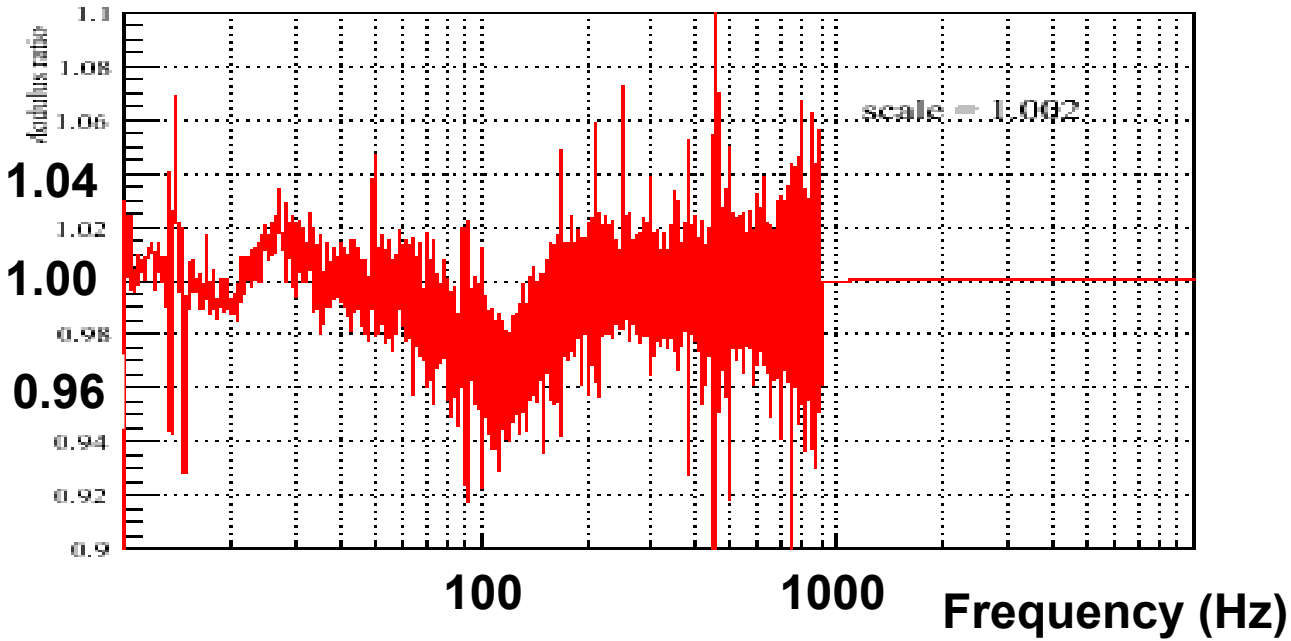
- ◆ **Update of HorizonTF**
 - ◆ online version Cali/v0r3p12: not the latest LN2 parameters
 - ◆ updated in v0r3p15
 - ◆ deals with switches LN1↔LN2 :TF updated just after the switch

→ will update online Cali version to v0r3p15

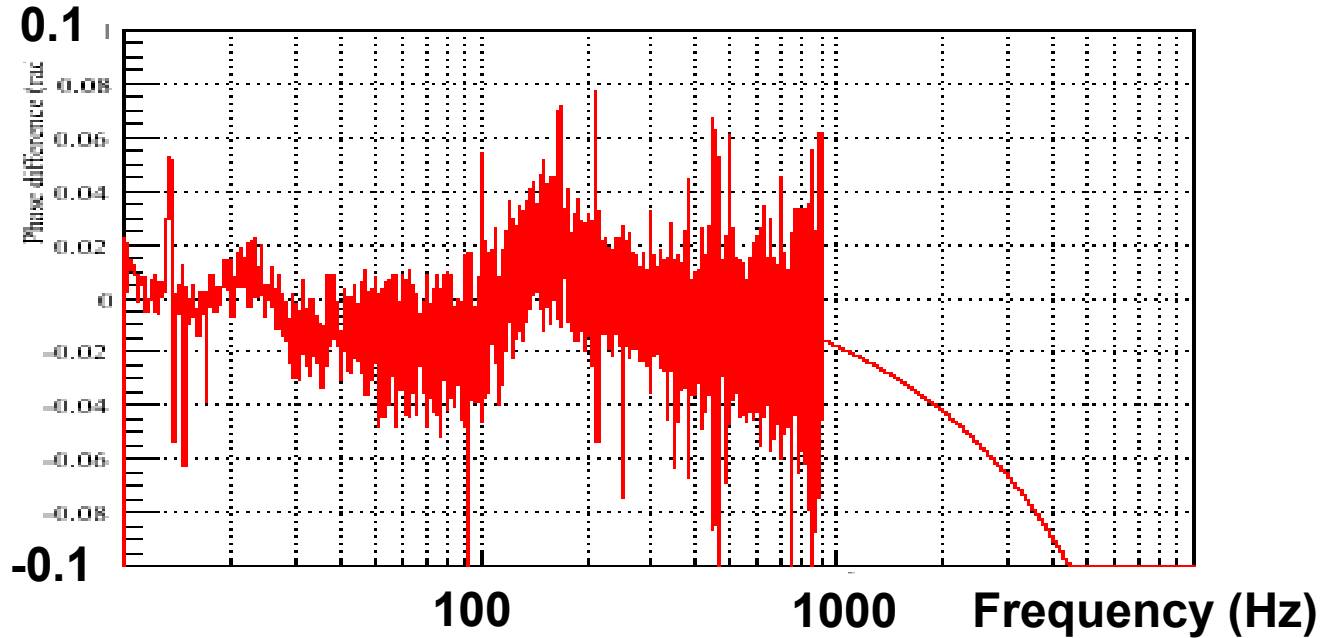
Virgo TF: LN2 vs LN1

GPS: 0993489117. UTC: Thu Jun 30 17:11:42 2011

Modulus ratio



Phase difference (rad)

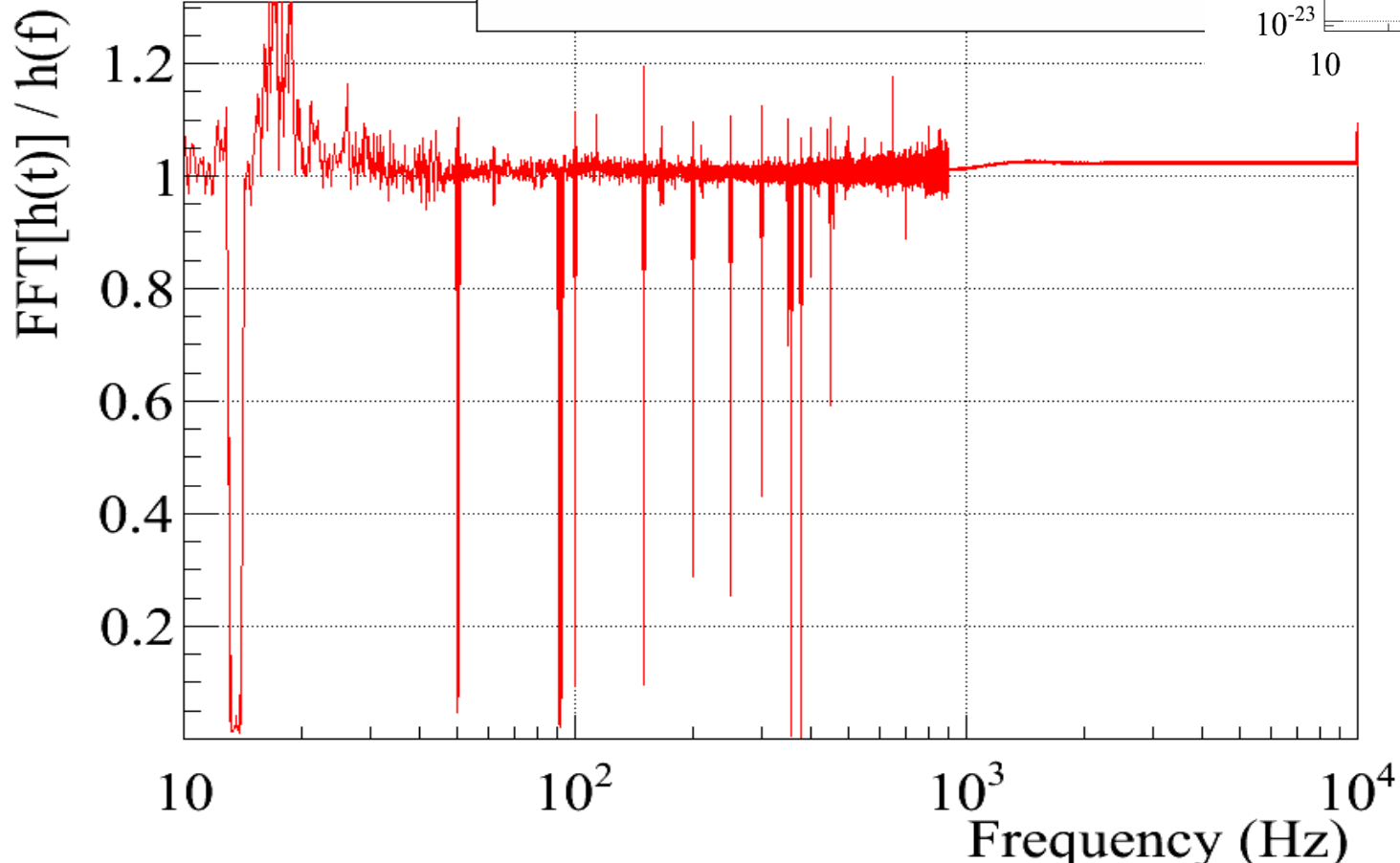
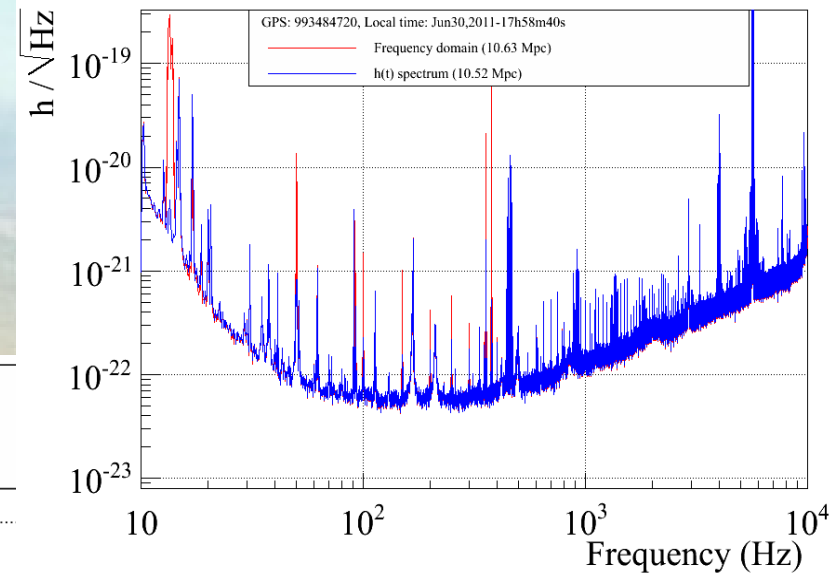


$\frac{TF(LN1)}{TF(LN2)}$
 \rightarrow stable



Update Hrec for LN2: $h(t)$ vs $h(f)$

- ◆ Offline $h(t)$ processing on LN2 data
→ comparison with $h(f)$



Update Hrec for LN2 online

- ◆ **Ongoing update of the code (Benoît) to deal with LN1-LN2 switches**
 - **testing on data from June 30th (4 switches)**
 - ◆ still some issues with finesse values (offset by ~ 10)
 - **comparison with $h(f)$ to be performed**

Next steps towards LN2

- ◆ **Complete hrec update and checks**
- ◆ **Update the online Cali and Hrec modules**
- ◆ **Update the hardware injection (update of AlpMain and AlpCa)**
 - ◆ Add loading hardware injections in the LN1-LN2 switch macro ?

→ ~1 hour of data with few switches LN1↔LN2 to check behaviour (today or tomorrow ?)
- ◆ **Check/update some calibration Alp macros**
 - ◆ “Injections for hrec check”: troubles to be understood
 - ◆ “Marionette calibration”: possible to be done in LN1 only ?
 - ◆ would need automatic switch LN2→LN1 in Alp