

OSEM noise estimates for HSTS & HLTS

Brian Lantz, Dec 3, 2020, G2002065-v1

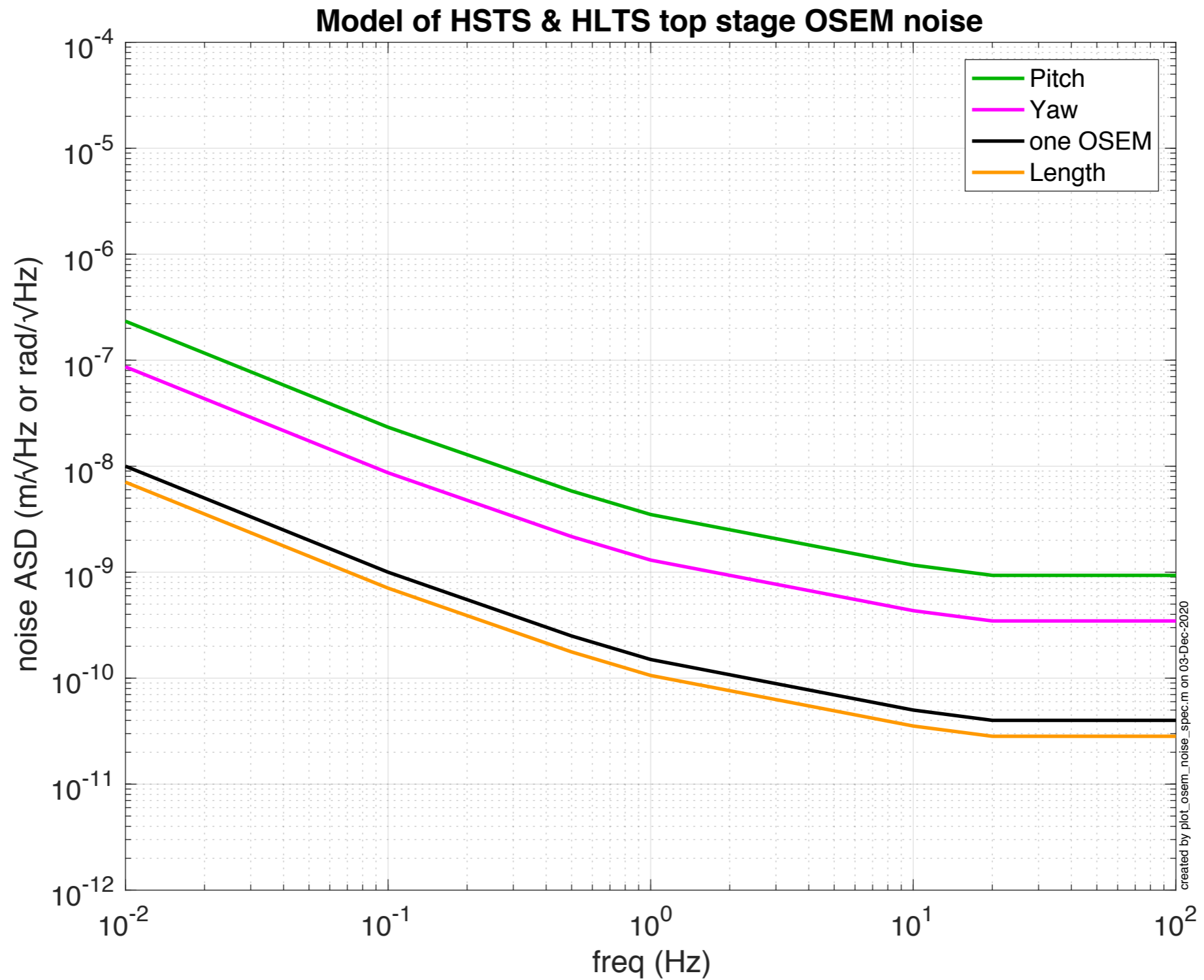
OSEM noise for the SRCL models

Data from LLO aLog 11688,

Stuart Aston, March 2014 (for SUS acceptance)

- Noise model is based the noise on the “top” OSEM, for the “undamped” acceptance testing.
- Try to pick the smooth parts between the peaks
- Top OSEMs have much lower signal below 0.1 Hz than the horizontals do. Guess would be tilt of the tables?
- SR2 is really noisy. Don't know why this is.
- To go from “one OSEM” to DOFs, scale L by $1/\sqrt{2}$, Scale Pitch and Yaw to match the measured noise a high freq
- Coded into function `HAM_SUS_OSEM_noise.m`

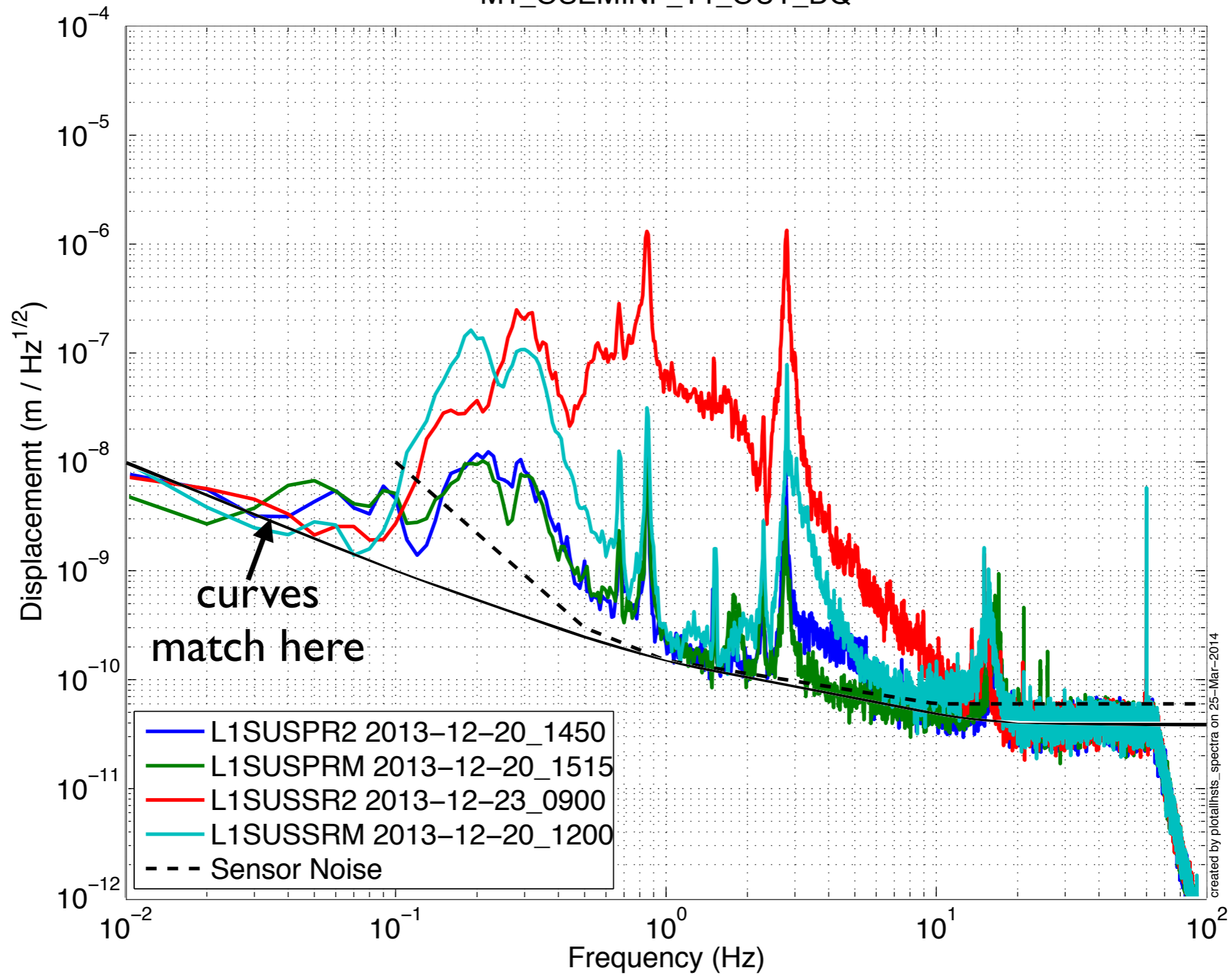
OSEM noise model for triples



Noise of top OSEM

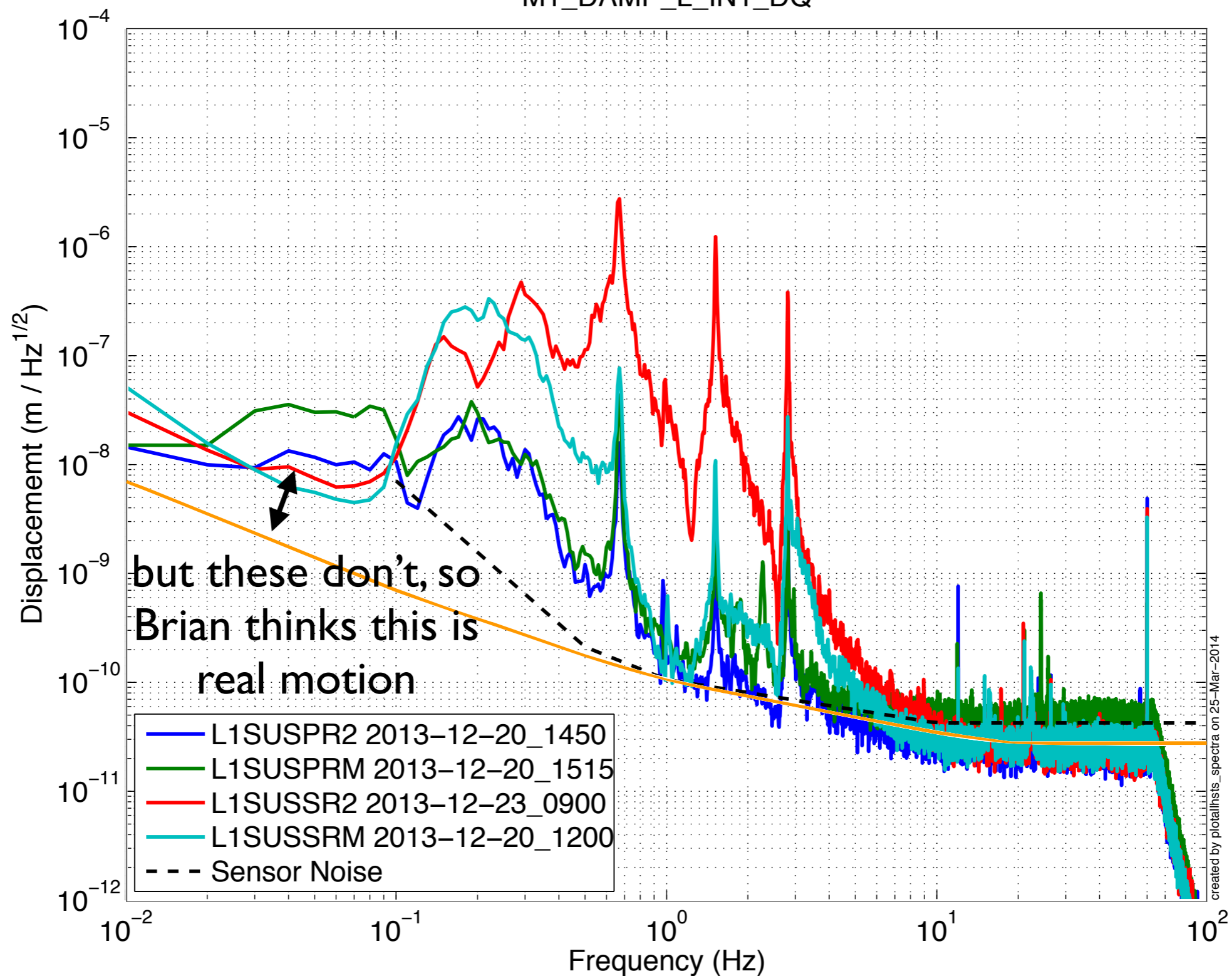
black line drawn over plot from LLO log 11688

(HSTS) Amplitude Spectral Density – Damping OFF
M1_OSEMINF_T1_OUT_DQ



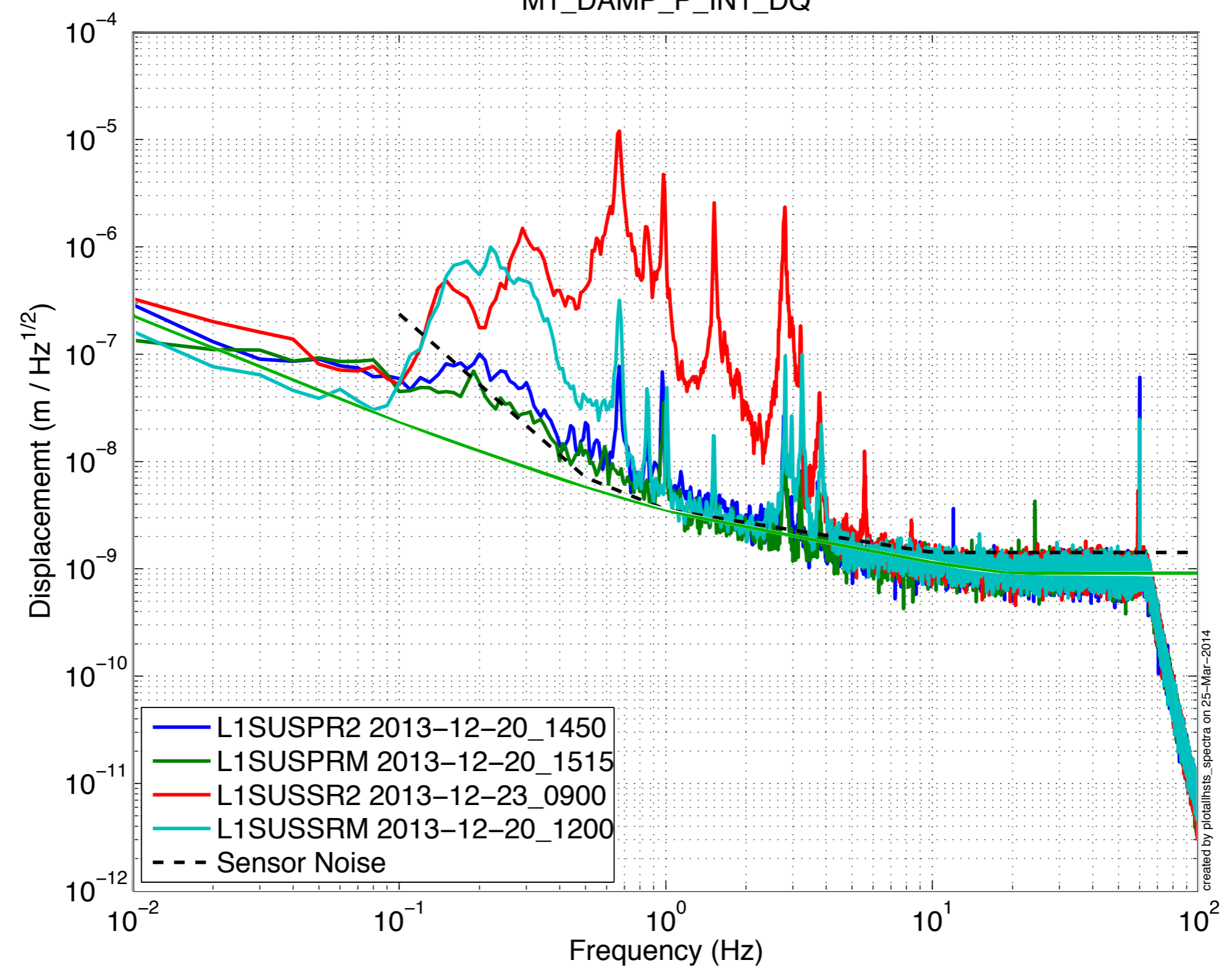
orange line drawn over plot from LLO log 11688

(HSTS) Amplitude Spectral Density – Damping OFF
M1_DAMP_L_IN1_DQ



green line drawn over plot from LLO log | I 1688

(HSTS) Amplitude Spectral Density – Damping OFF
M1_DAMP_P_IN1_DQ



Noise of M1 Yaw OSEM DOF

magenta line drawn over plot from LLO log 11688

(HSTS) Amplitude Spectral Density – Damping OFF
M1_DAMP_Y_IN1_DQ

