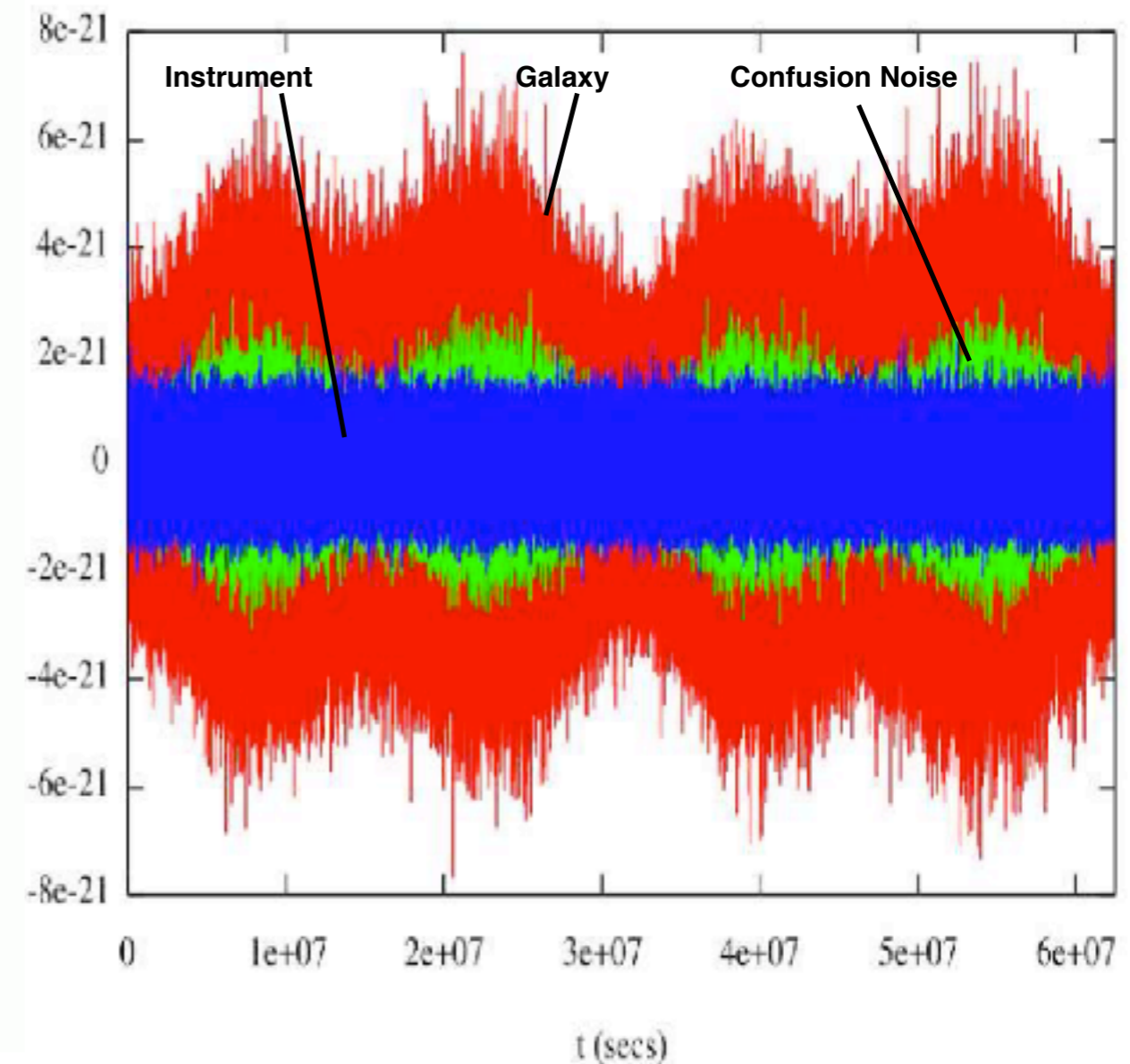
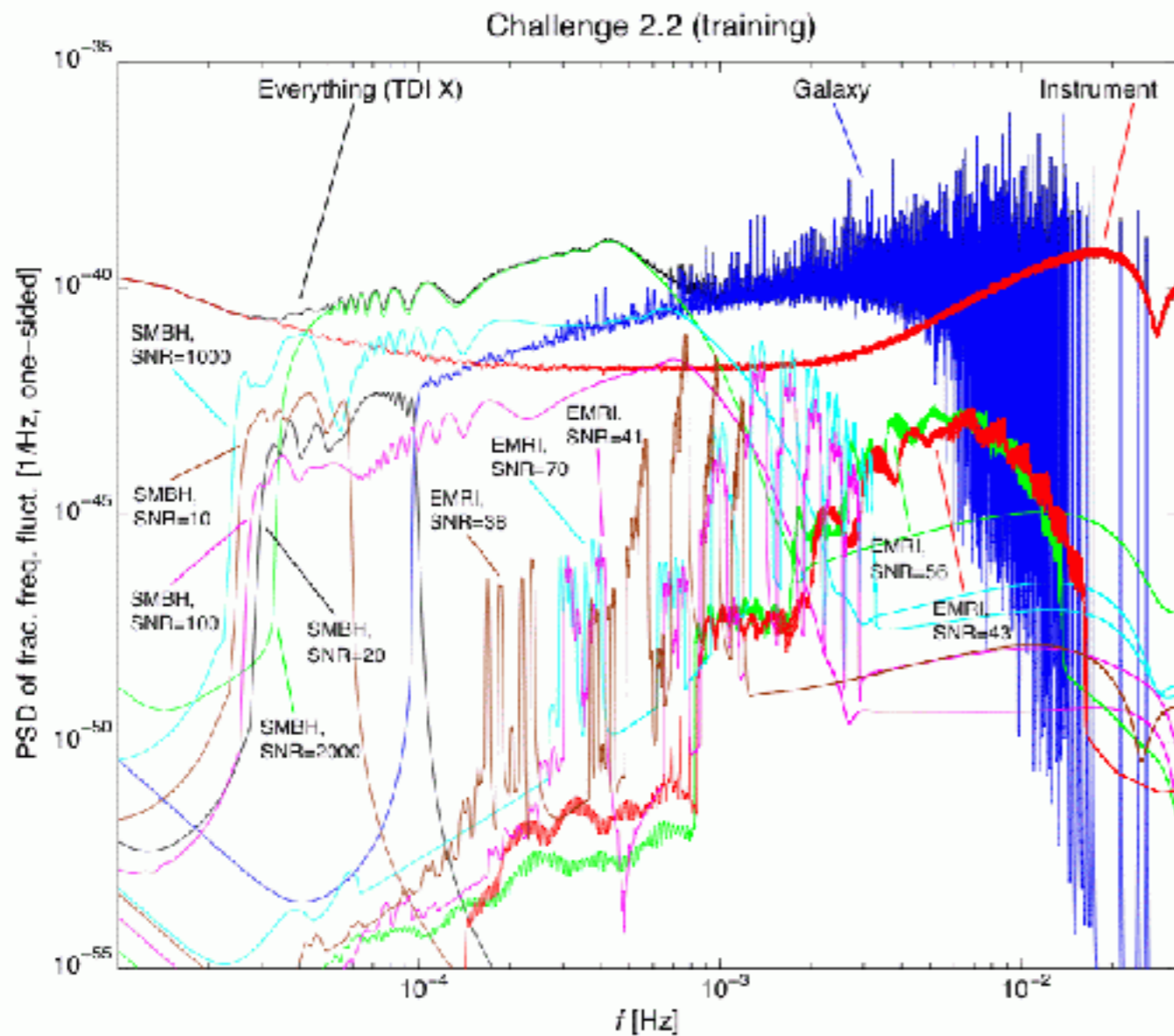


# LISA is not LIGO in space



Thousand of overlapping signals

Many complex signals with multiple modulation timescales and harmonics



Current templates inadequate for accurate removal of bright signals

Noise is non-stationary on timescale of the signals


No off-source data for independent noise estimation

No second detector to veto noise transients

# MLDC, PTAs and LIGO heritage

**LIGO** - BH waveform templates, reduced order models, Bayesian spectral estimation   
- frequentist detection statistics, template banks, LAL 

**PTAs** - orbit model, data gaps, uneven data spacing, non-stationary noise, full marginalization over complex noise model, global Bayesian analysis

**MLDC** - accurate recovery of 20K GBs; multiple non-precessing BHs with the GBs, multiple loud EMRIs (with questionable waveforms), accurate recovery of stochastic signal, simultaneous signal and noise modeling   
- realistic noise with gaps, glitches, other non-stationarity/gaussianity; realistic signal models, precession, merger, EMRI resonances; time evolving solution, level zero TDI generation 