# Pressure checks Wed. 09-01-2025

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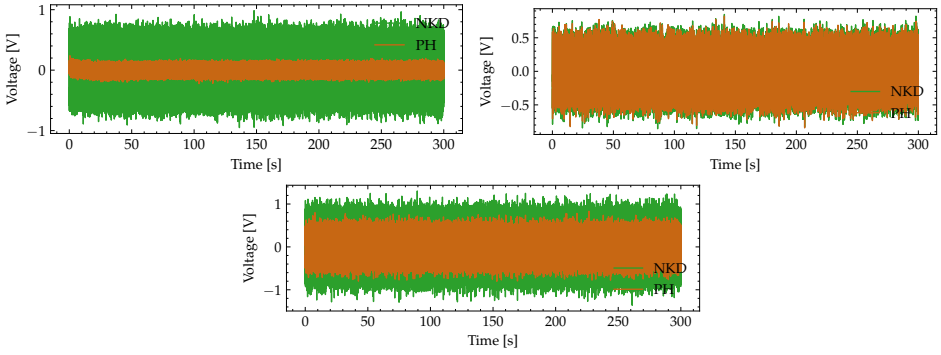
# Raw calibration signals




**Top left:** white noise, **top right:** *only* facility noise, **bottom:** white noise + facility noise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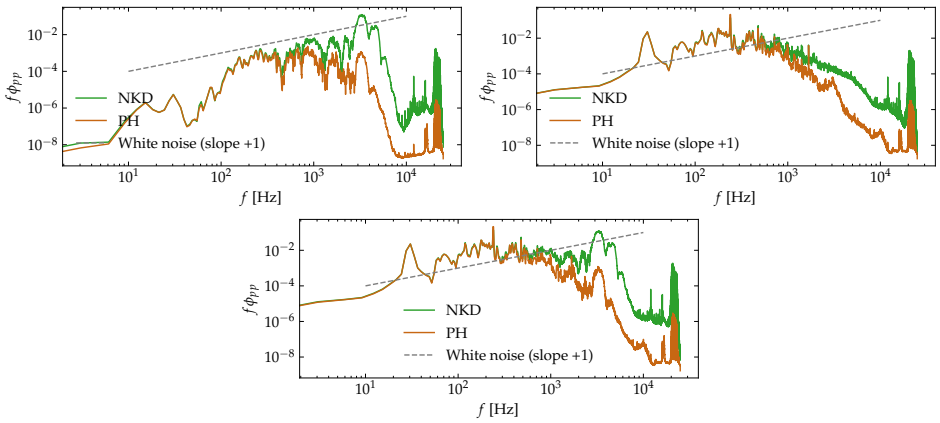
# Raw calibration spectra: welch, $N_{\text{bin}} = 2^{14}$, $t_{\text{seg}} = 0.33\text{s}$




The PH doesn't suppress anything below $f = 500[\text{Hz}]$ ($T^{+} \approx 40$)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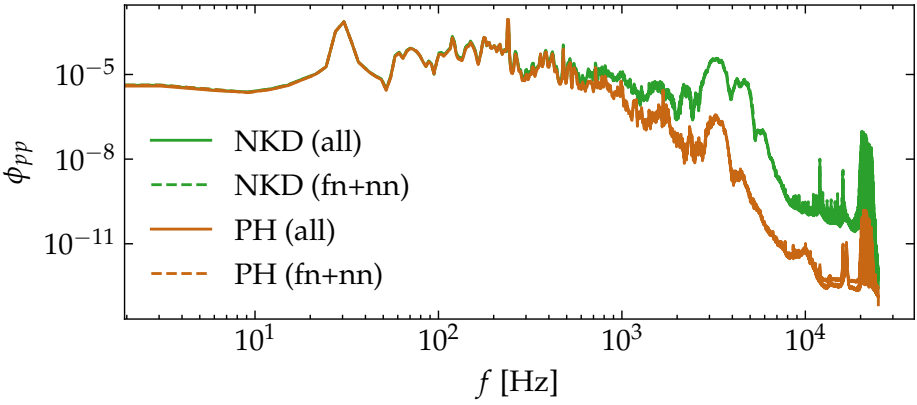
# The calibration noise adds up





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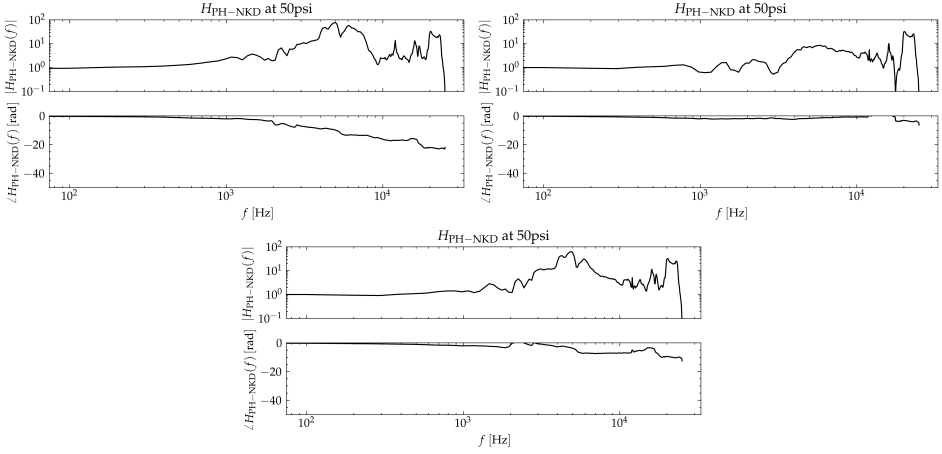
# White noise is needed to highlight required TF





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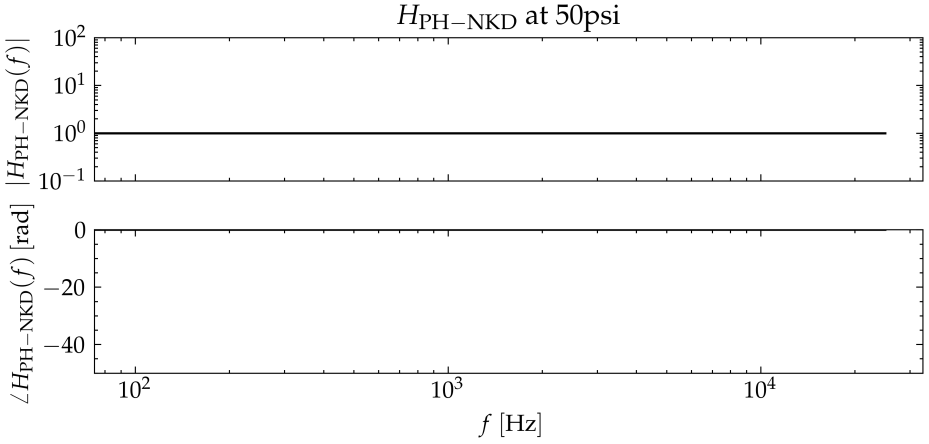
# TF function between identical signals is 1





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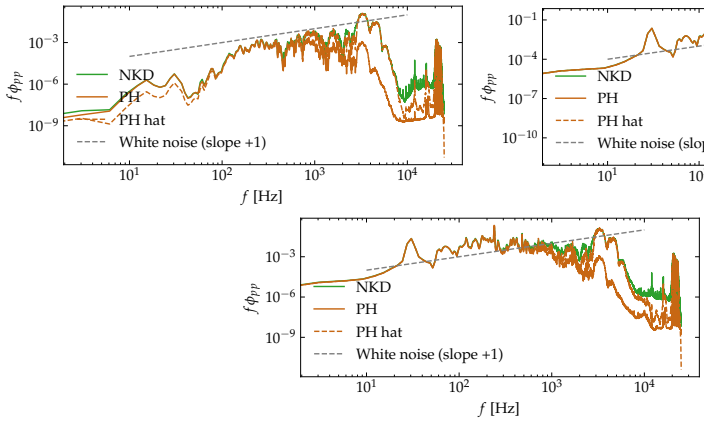
# TF reconstructed spectra




There seems to be some low-end oddities in application of the TF. This could be due to the low-frequency resolution, try a HP&LP filter.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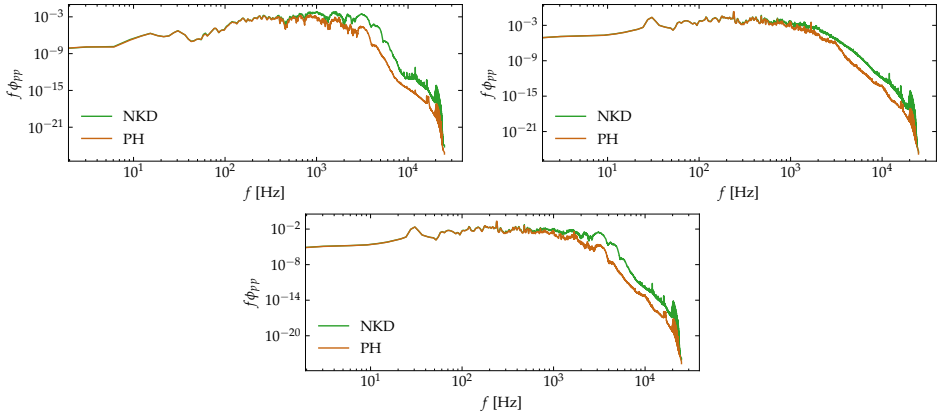
# Spectra w. HP & LP filter

Filter at 0.1Hz and 2kHz corresponding to LP cutoff of $T^+ = 10$ at 50psi





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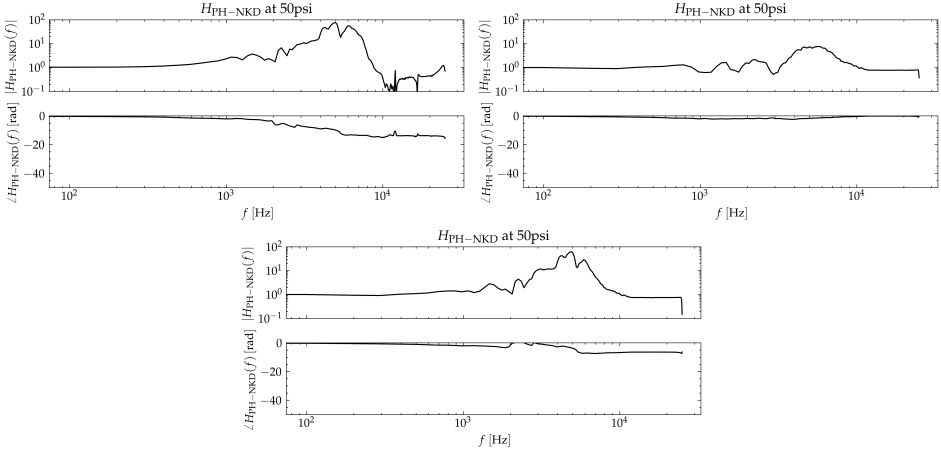
# Do the TFs look reasonably similar after filtering?





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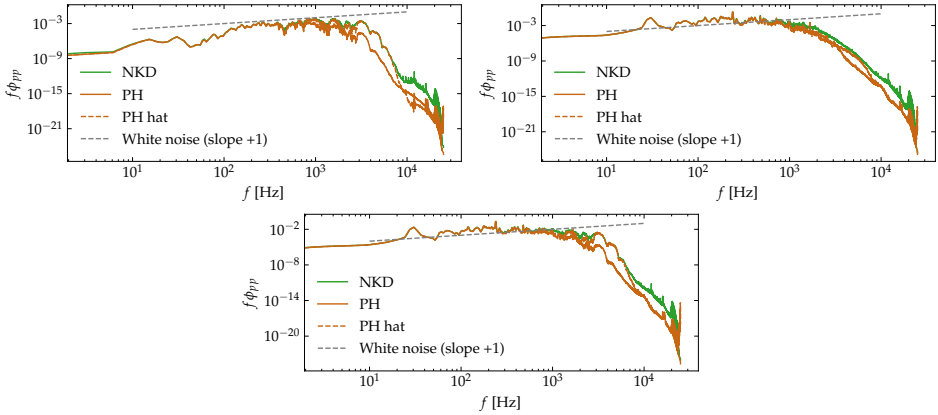
# TF reconstructed spectra with HP & LP filter




There's no benefit of filtering the signals before calculating the TF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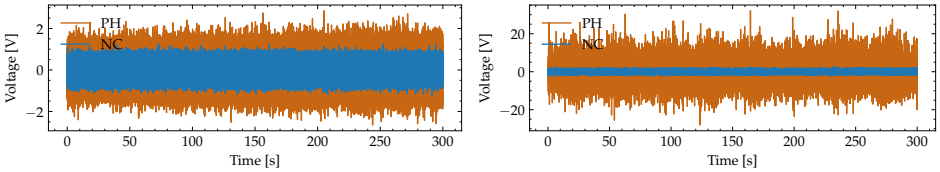
# In-situ measurements at 50psi




**Left:** facility noise (no flow), **right:** flow on measurements.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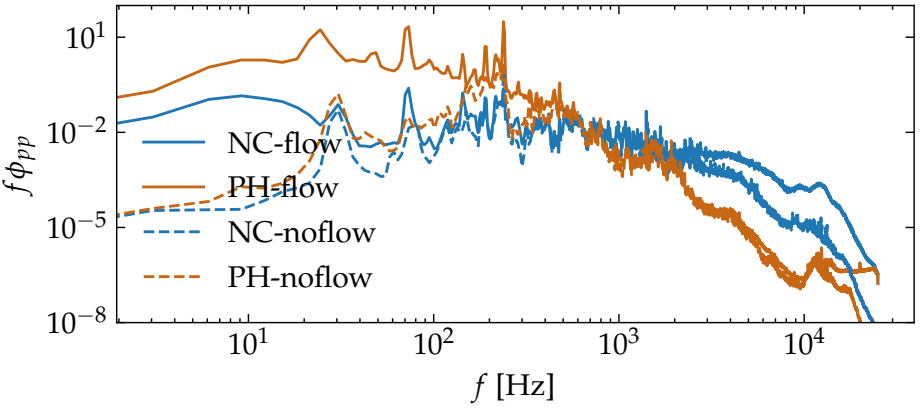
# In-situ spectra at 50psi





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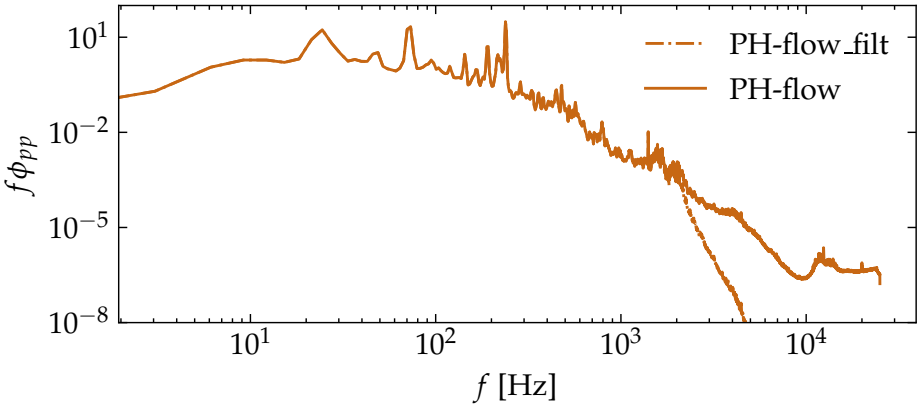
# In-situ spectra at 50psi, filtered at 0.1Hz and 2kHz





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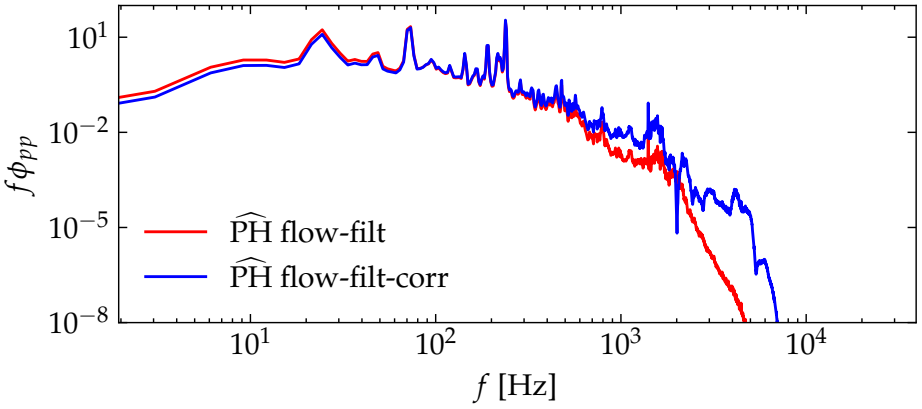
# In-situ spectra at 50psi, filtered at 0.1Hz and 2kHz, corrected by TF





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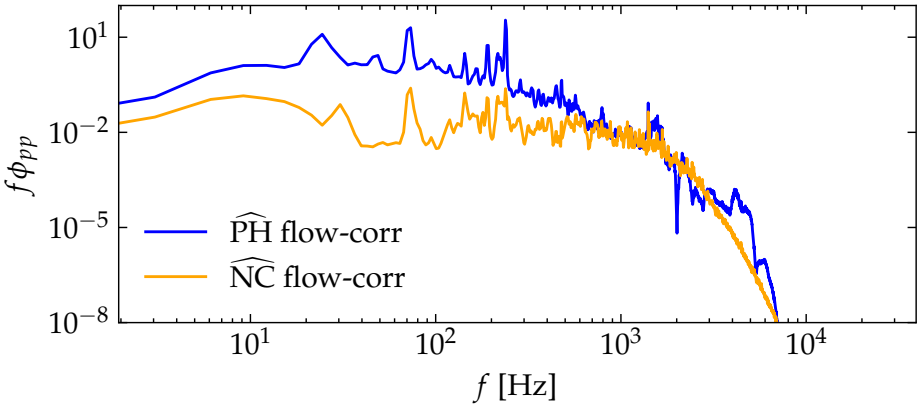
# Compare this corrected PH to the NC





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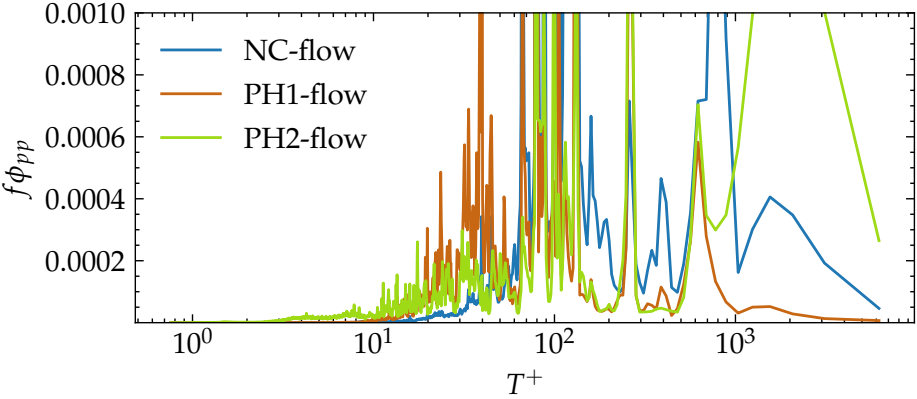
# We're getting somewhere, we have new data though




This looks better, but the sticking point is the noise rejection. I'll work on that next.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