

## Pressure measurements

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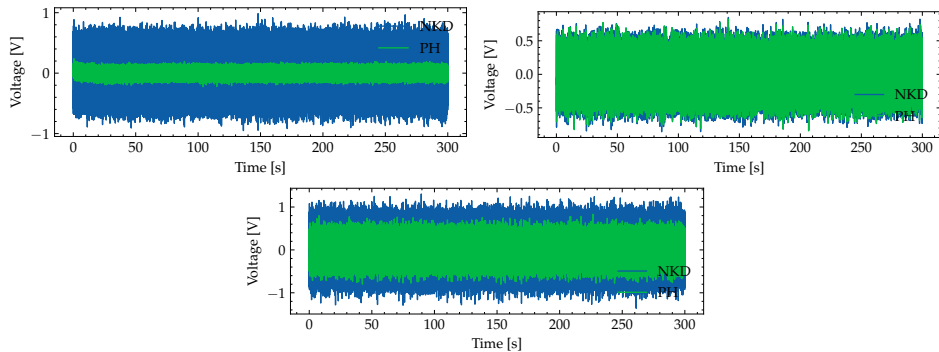
Center for Turbulence Research  
Stanford University

October 2, 2025

Thanks to DARPA for funding this work.

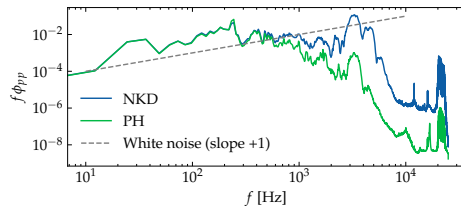
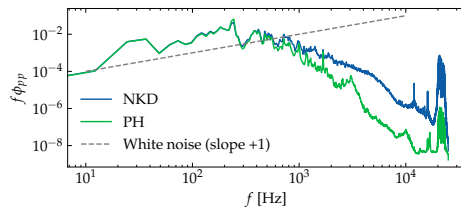
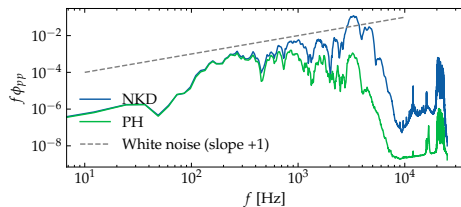
1. Focus on 50psi ph calibration signals
2. Show the raw signals
  - ▶ Show loglog for 3 cases.
  - ▶ No noise, w. background noise, white noise ?
3. Show the spectra
4. Show with HP filtering
5. Apply transfer function and show the TF
6. Determine whether a LP filter can be applied at  $f = 2kHz$ 
  - ▶  $T^+ \equiv Tu_\tau^2/\nu$
  - ▶ at 50psi  $Re_\tau \approx 5000$   $u_\tau \approx 0.51$ ,  $\nu \approx 1.43$
  - ▶  $T^+ = 20 \rightarrow f = 948Hz$
- 7.

# Raw signals

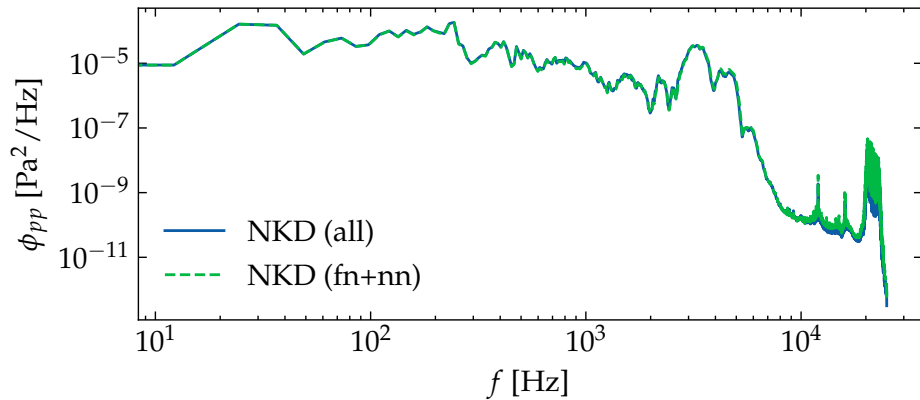


**Top left:** white noise, **top right:** *only* facility noise, **bottom:** white noise + facility noise

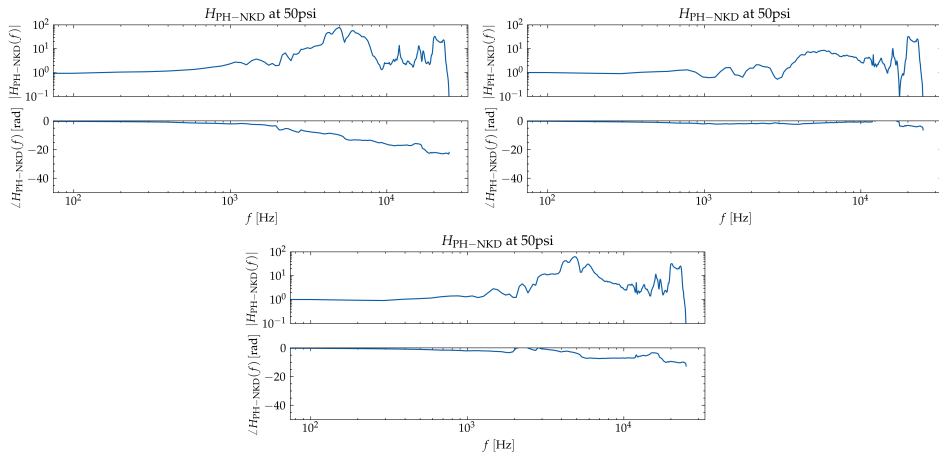
# Raw Spectra



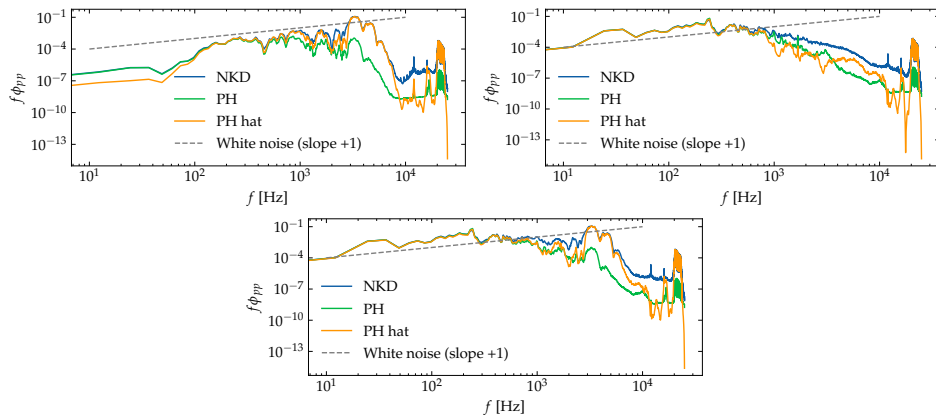
## Does the noise add up?

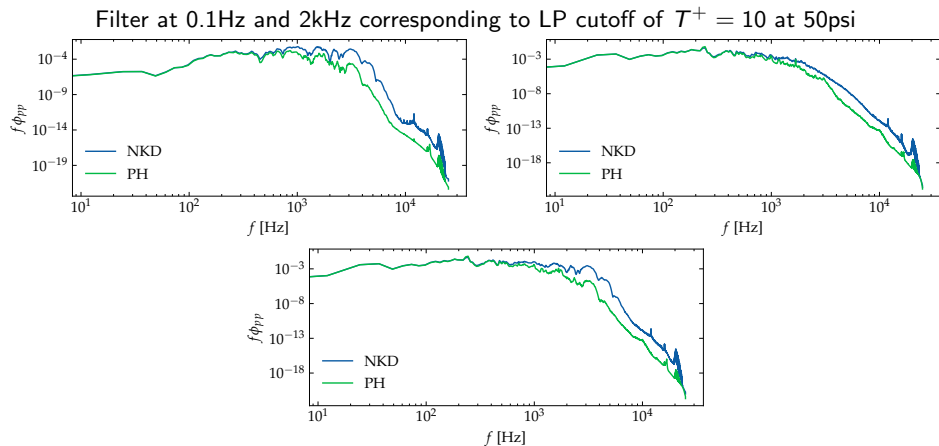


# Do the TFs look reasonably similar?



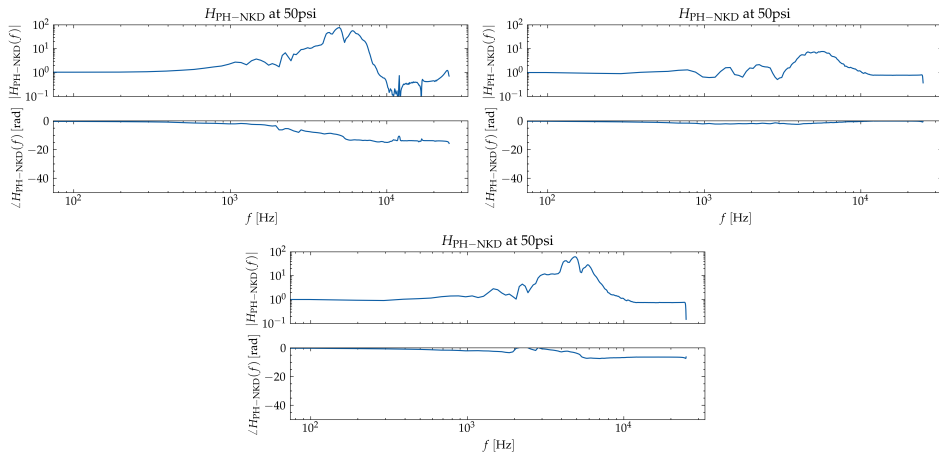
# TF reconstructed spectra



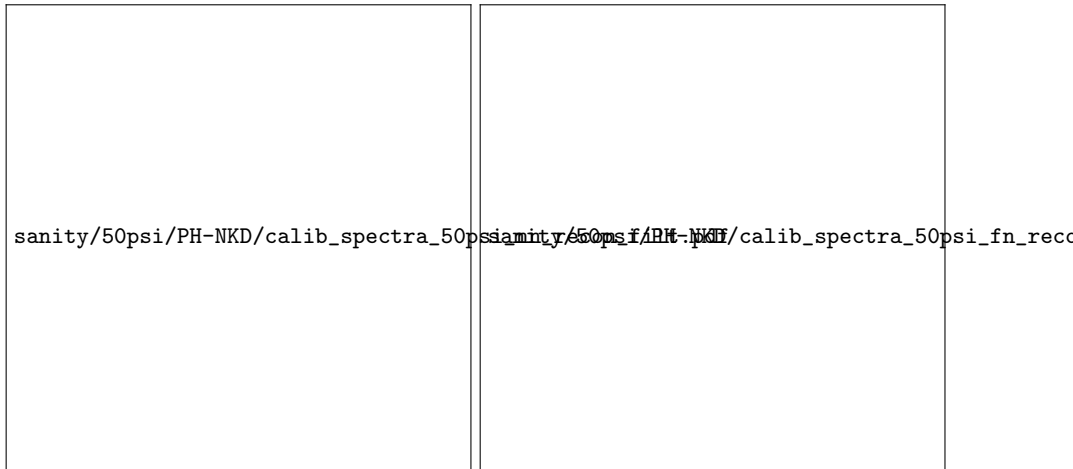




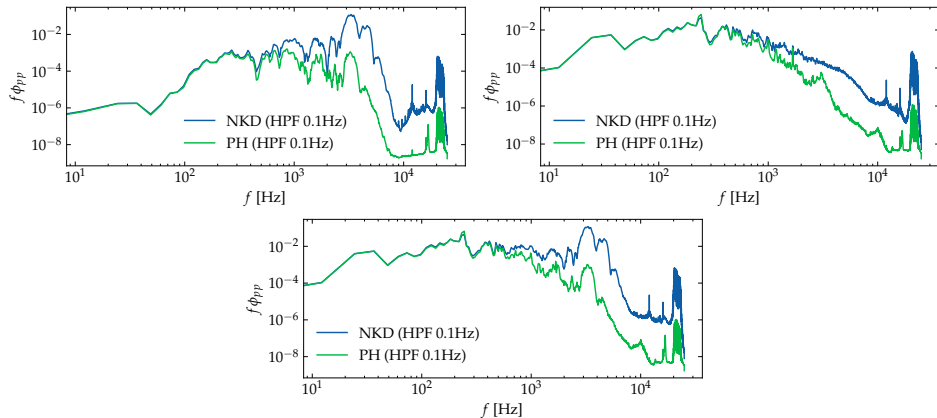
# Do the TFs look reasonably similar after filtering?



## TF reconstructed spectra with HP & LP filter



## Raw Spectra with HP filter: no difference in the calibration signal



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