SU update: Best estimate

JMO Massey[†], F Cabrera-Booman, JC Klewicki, T Jaroslawski, BJ McKeon

Center for Turbulence Research Stanford University

October 29, 2025

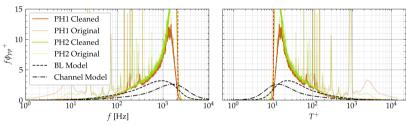
Thanks to DARPA for funding this work.

 $ightharpoonup \delta pprox 0.035 [m], \ U_e pprox 14 [m/s]$

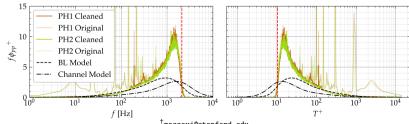
Pressure (psi)	0	50	100
$u_{ au}[m/s]$	0.58	0.47	0.52
ν / $u_{ au}$ [m]	27×10^{-6}	7.5×10^{-6}	3.7×10^{-6}
$ u$ [m $^2/s$]	$15.7{ imes}10^{-6}$	3.52×10^{-6}	$1.92{ imes}10^{-6}$
$Re_{ au}$	1,300	4,700	9,500

Measurements are very sensitive to their fitting

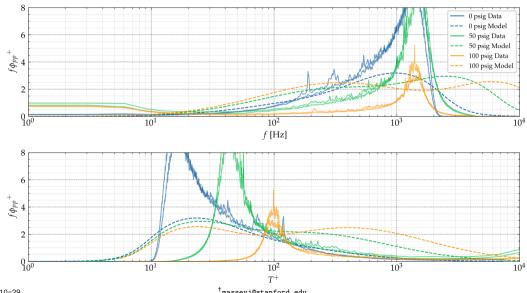




 $Re_{\tau} \approx 1{,}300 \,(700 \mu \mathrm{m})$ - New Mounting

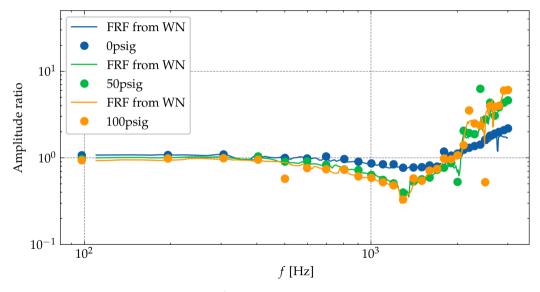


FS noise rejected



Spec. 10-29

Measurements look great, but the final result is very sensitive to the calibration



Mapping the data to the model gives us an idea of what the TFs *should* be (- - lines are currently measured)

