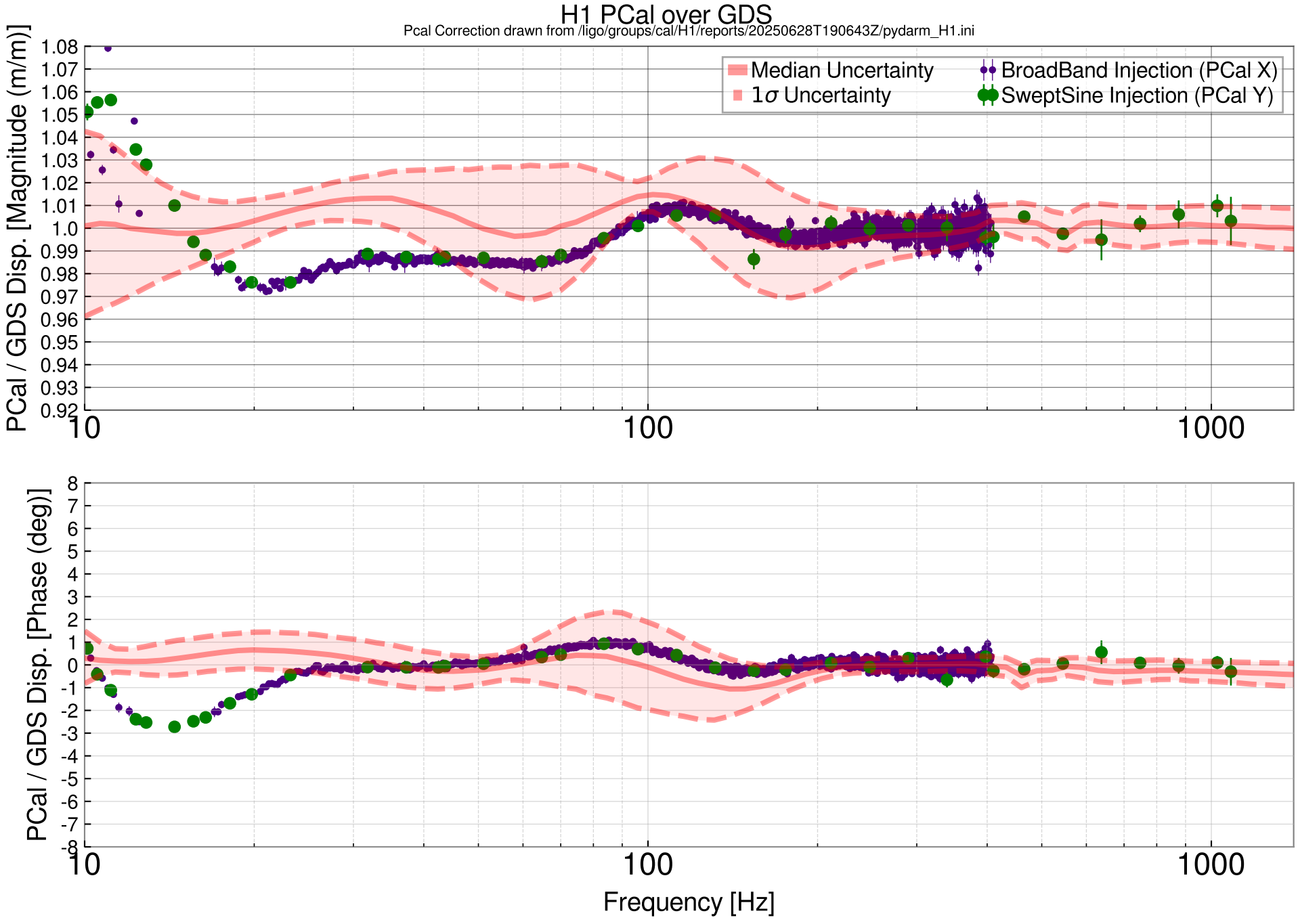
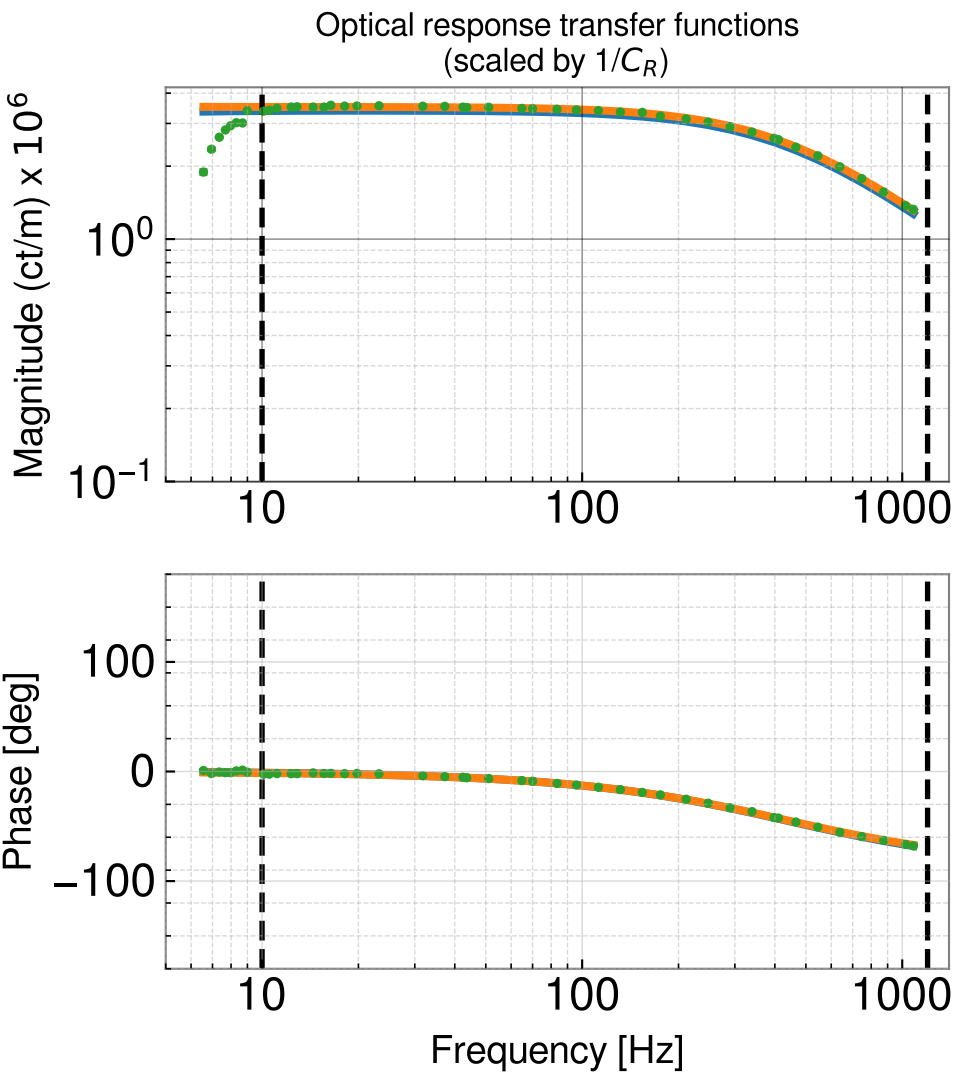
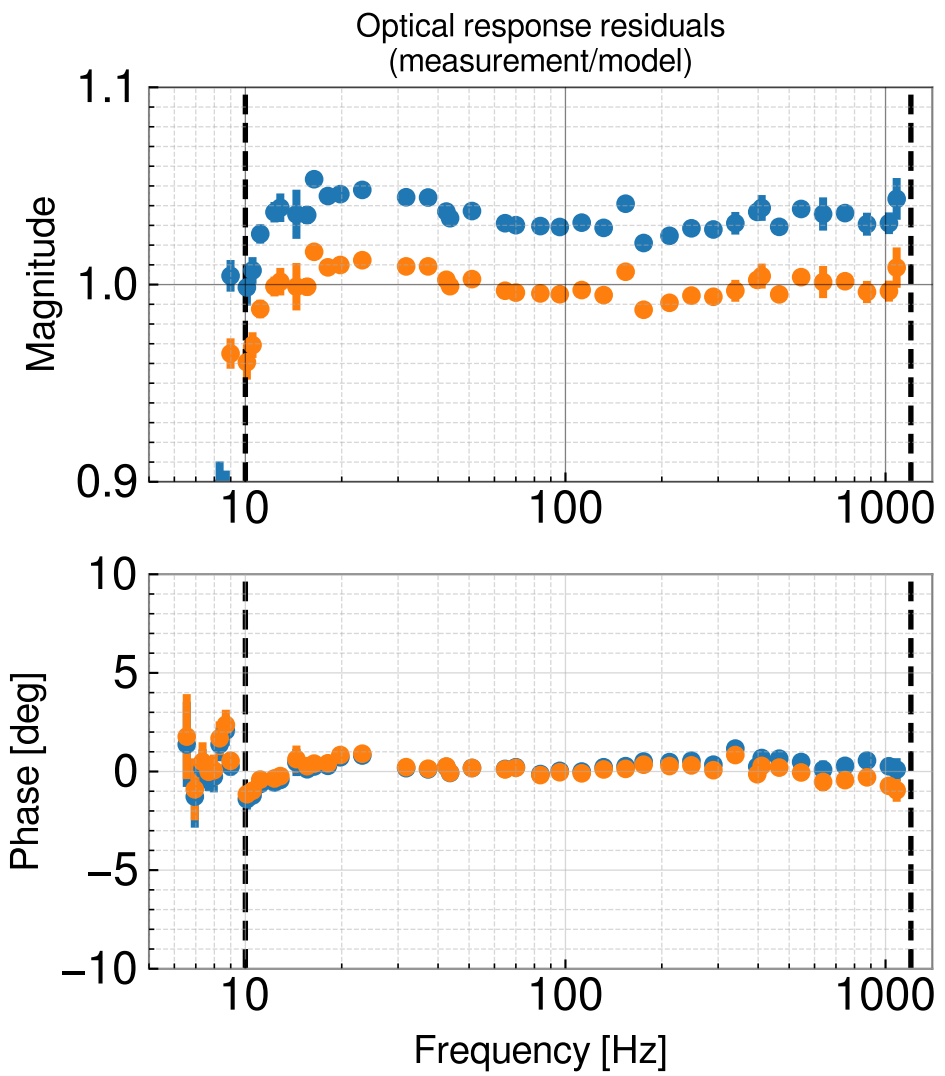

H1 PCal over GDS
Pcal Correction drawn from /ligo/groups/cal/H1/reports/20250628T190643Z/pydarm_H1.ini
Median Uncertainty
1σ Uncertainty
BroadBand Injection (PCal X)
SweptSine Injection (PCal Y)
PCal / GDS Disp. [Magnitude (m/m)]
PCal / GDS Disp. [Phase (deg)]
Frequency [Hz]
10
100
1000

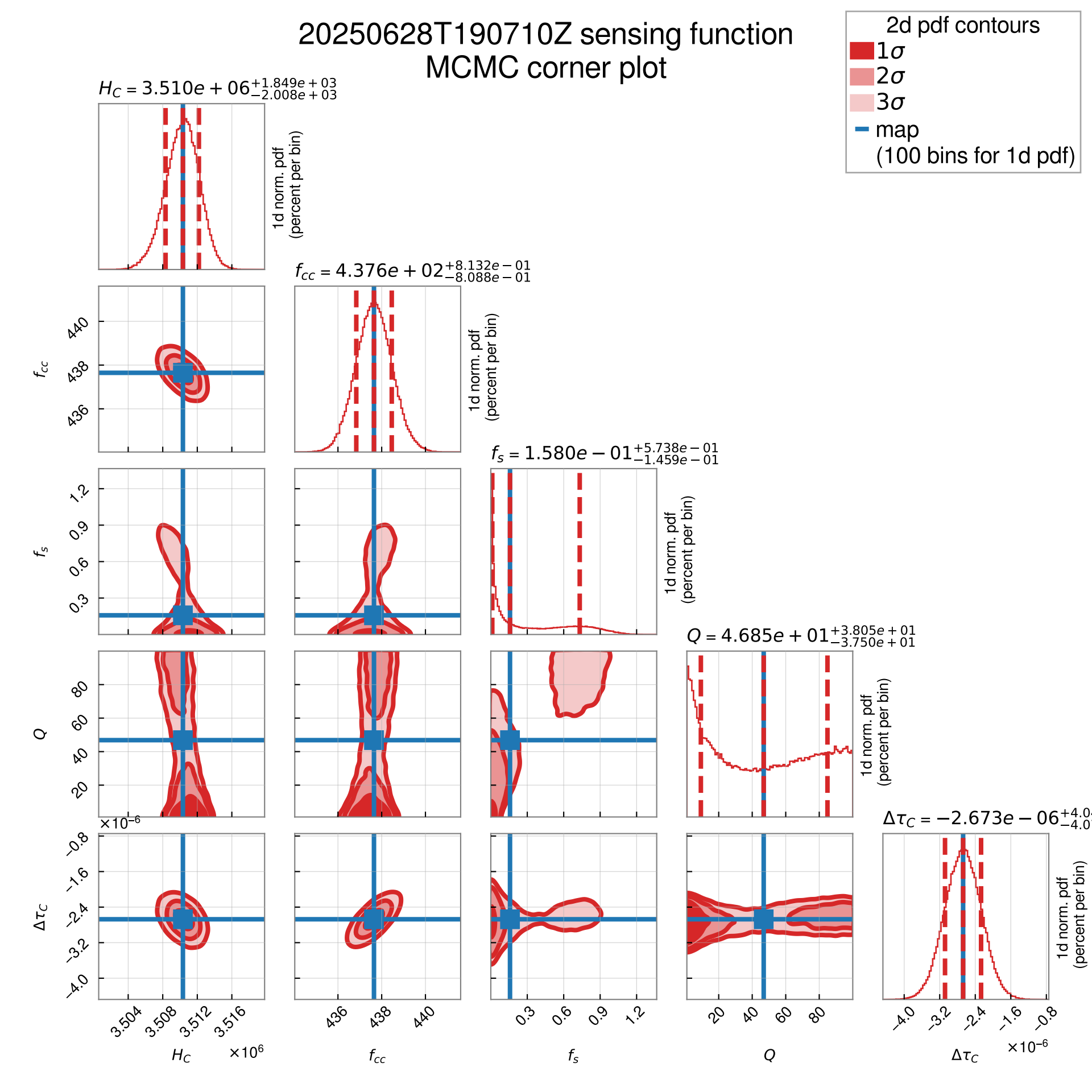
H1 sensing model MCMC summary

All fixed parameters drawn from /ligo/groups/cal/H1/reports/20250628T190643Z/pydarm_H1.ini



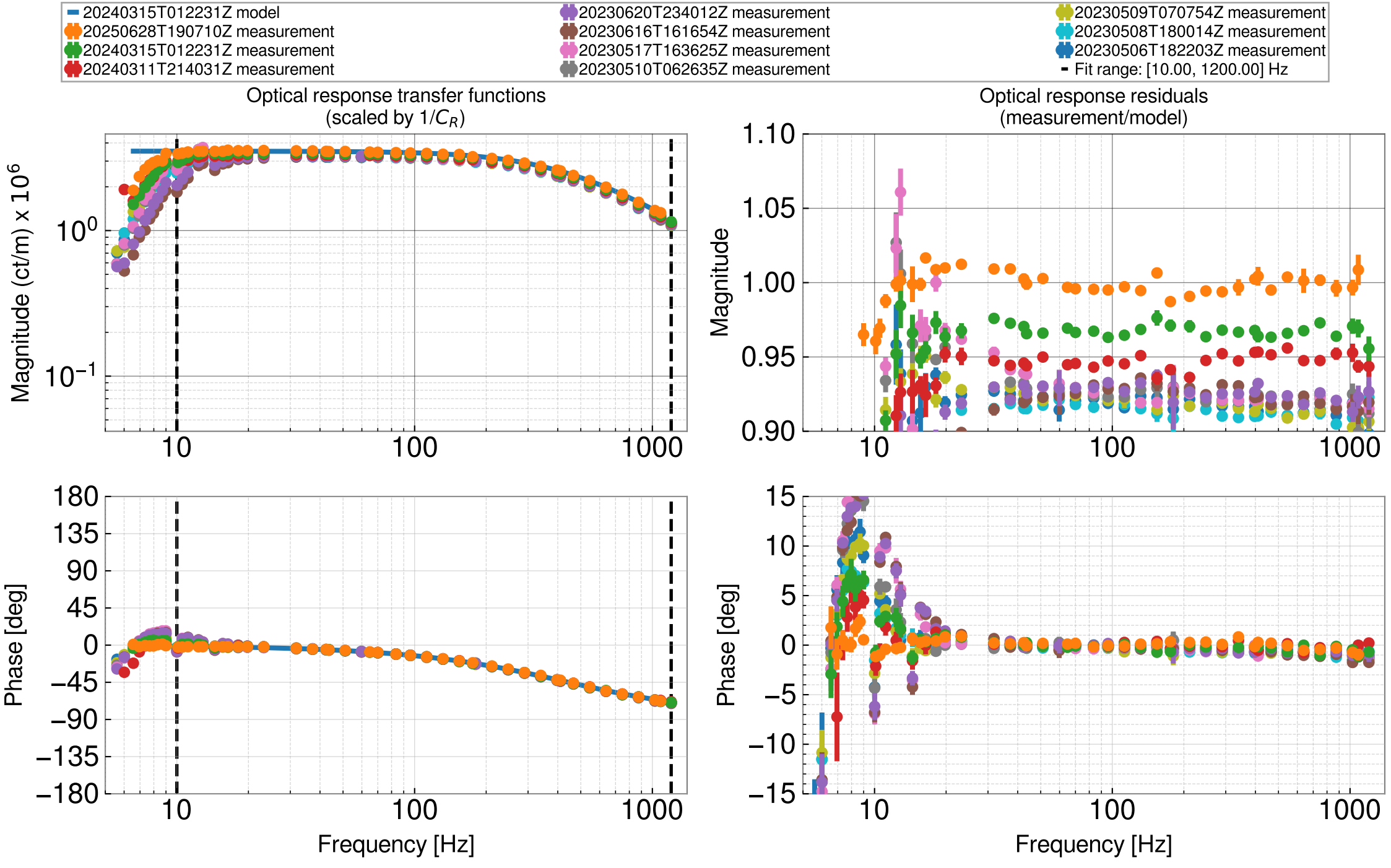


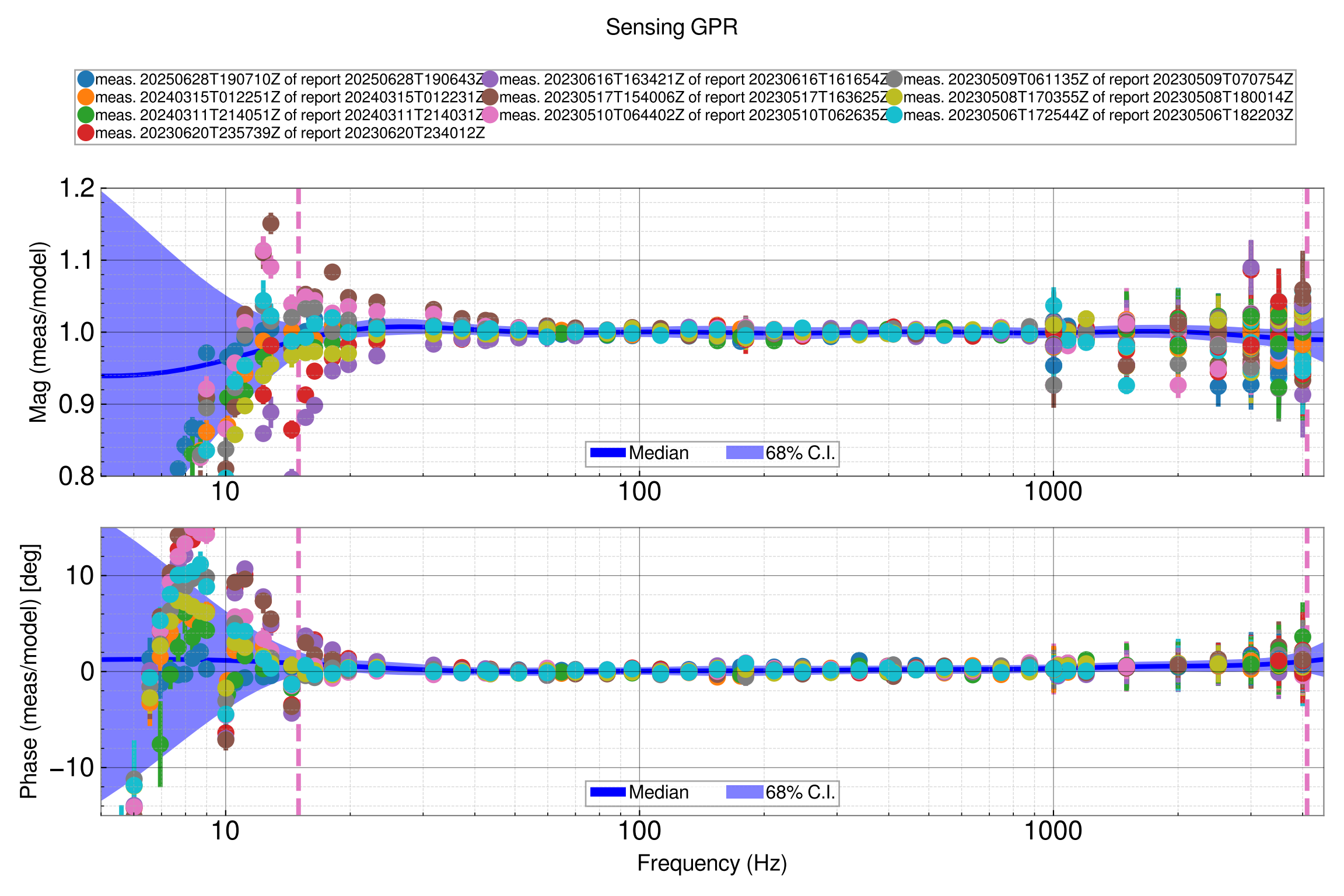
Parameter (value +/-)	value	+	-
Optical gain, H_c (ct/m)	3.51e+06	1849 (0.05%)	2008 (0.06%)
Cavity_pole, f_cc (Hz)	437.6	0.8132 (0.19%)	0.8088 (0.18%)
Detuned SRC spring frequency, f_s (Hz)	0.158	0.5738 (363.23%)	0.1459 (92.35%)
Detuned SRC spring quality factor, Q_s	46.85	38.05 (81.22%)	37.5 (80.04%)
Residual time delay, tau_c (s)	-2.673e-06	4.042e-07 (-15.12%)	4.073e-07 (-15.24%)


20250628T190710Z sensing function
MCMC corner plot
2d pdf contours
1σ
2σ
3σ
map
(100 bins for 1d pdf)
$H_C = 3.510e+06^{+1.849e+03}_{-2.008e+03}$
$f_{cc} = 4.376e+02^{+8.132e-01}_{-8.088e-01}$
$f_s = 1.580e-01^{+5.738e-01}_{-1.459e-01}$
$Q = 4.685e+01^{+3.805e+01}_{-3.750e+01}$
$\Delta\tau_C = -2.673e-06^{+4.0}_{-4.0}$
1d norm. pdf
(percent per bin)
H_C
f_{cc}
f_s
Q
$\Delta\tau_C$
×10⁶
×10⁻⁶

H1 sensing model history (last 9 measurements)

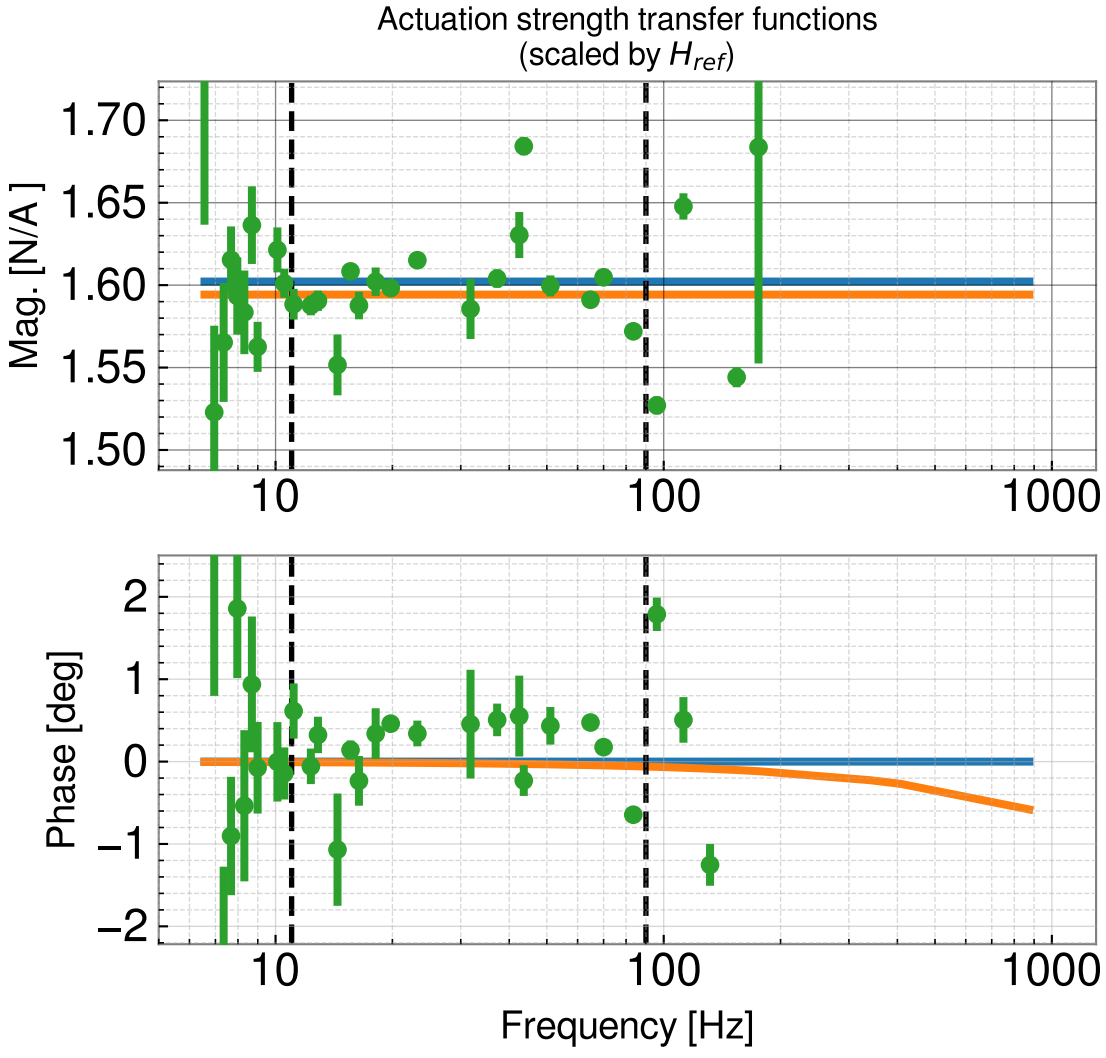
All fixed parameters drawn from /ligo/groups/cal/H1/reports/20250628T190643Z/pydarm_H1.ini

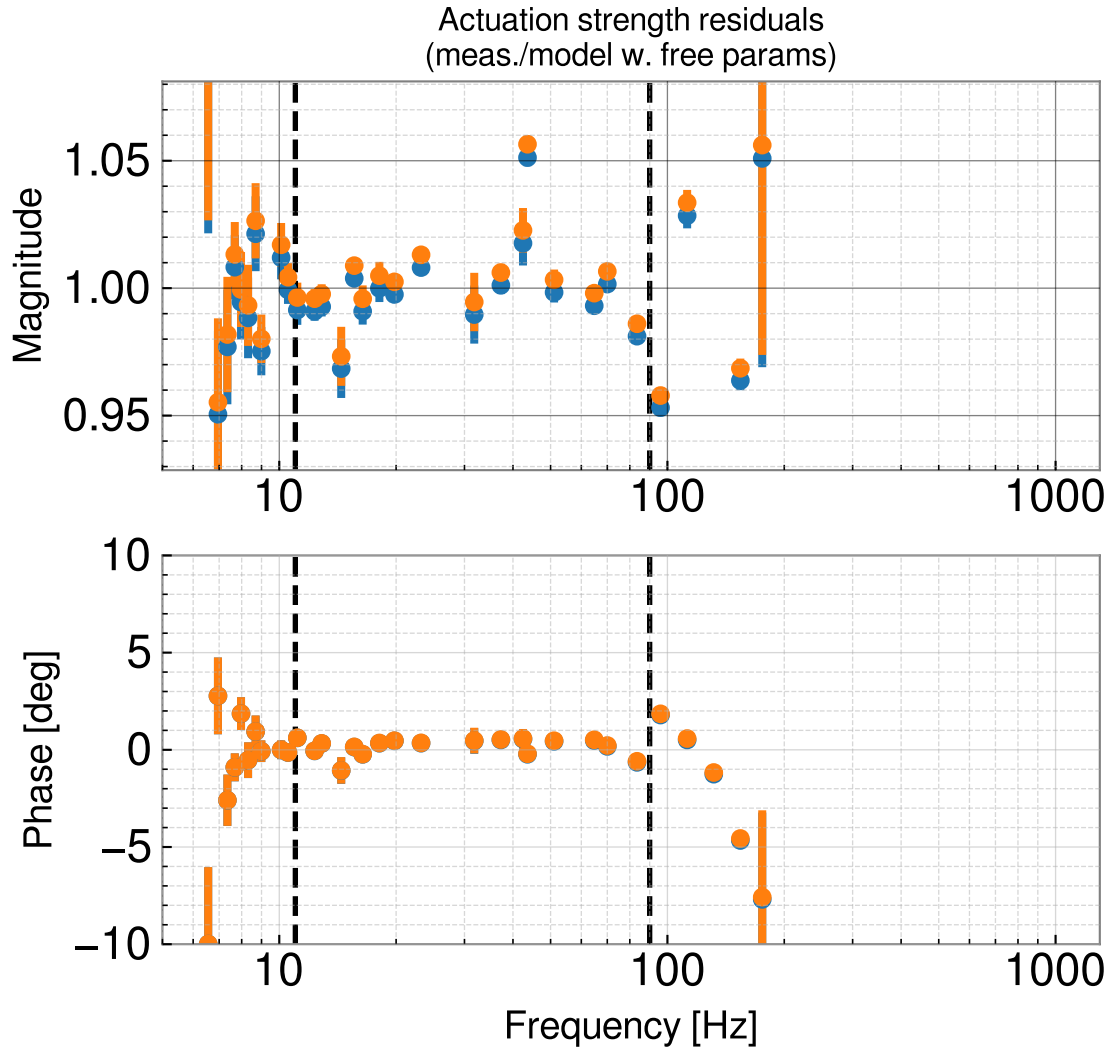



Sensing GPR
meas. 20250628T190710Z of report 20250628T190643Z
meas. 20240315T012251Z of report 20240315T012231Z
meas. 20240311T214051Z of report 20240311T214031Z
meas. 20230620T235739Z of report 20230620T234012Z
meas. 20230616T163421Z of report 20230616T161654Z
meas. 20230517T154006Z of report 20230517T163625Z
meas. 20230510T064402Z of report 20230510T062635Z
meas. 20230509T061135Z of report 20230509T070754Z
meas. 20230508T170355Z of report 20230508T180014Z
meas. 20230506T172544Z of report 20230506T182203Z
Mag (meas/model)
1.2
1.1
1.0
0.9
0.8
Median
68% C.I.
10
100
1000
Phase (meas/model) [deg]
10
0
−10
Median
68% C.I.
10
100
1000
Frequency (Hz)

H1SUSEX L1 actuation model MCMC summary

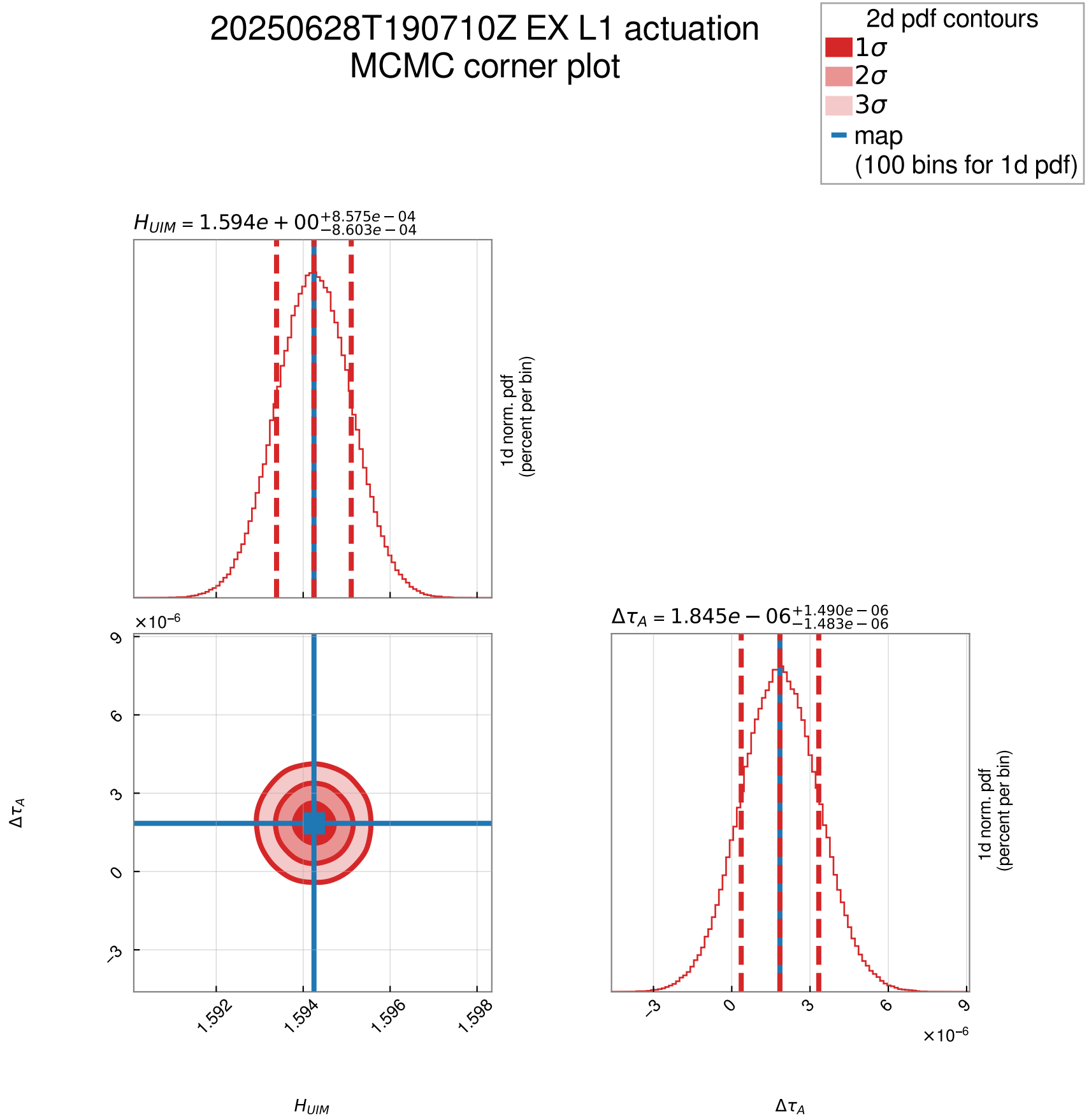
All fixed parameters drawn from /ligo/groups/cal/H1/reports/20250628T190643Z/pydarm_H1.ini





Parameter (value +/-)	value	+	-
Actuation Gain, Hau (N/A)	1.594	0.0008575 (0.05%)	0.0008603 (0.05%)
Residual time delay, tau_A (s)	1.845e-06	1.49e-06 (80.76%)	1.483e-06 (80.37%)

20250628T190710Z EX L1 actuation
MCMC corner plot



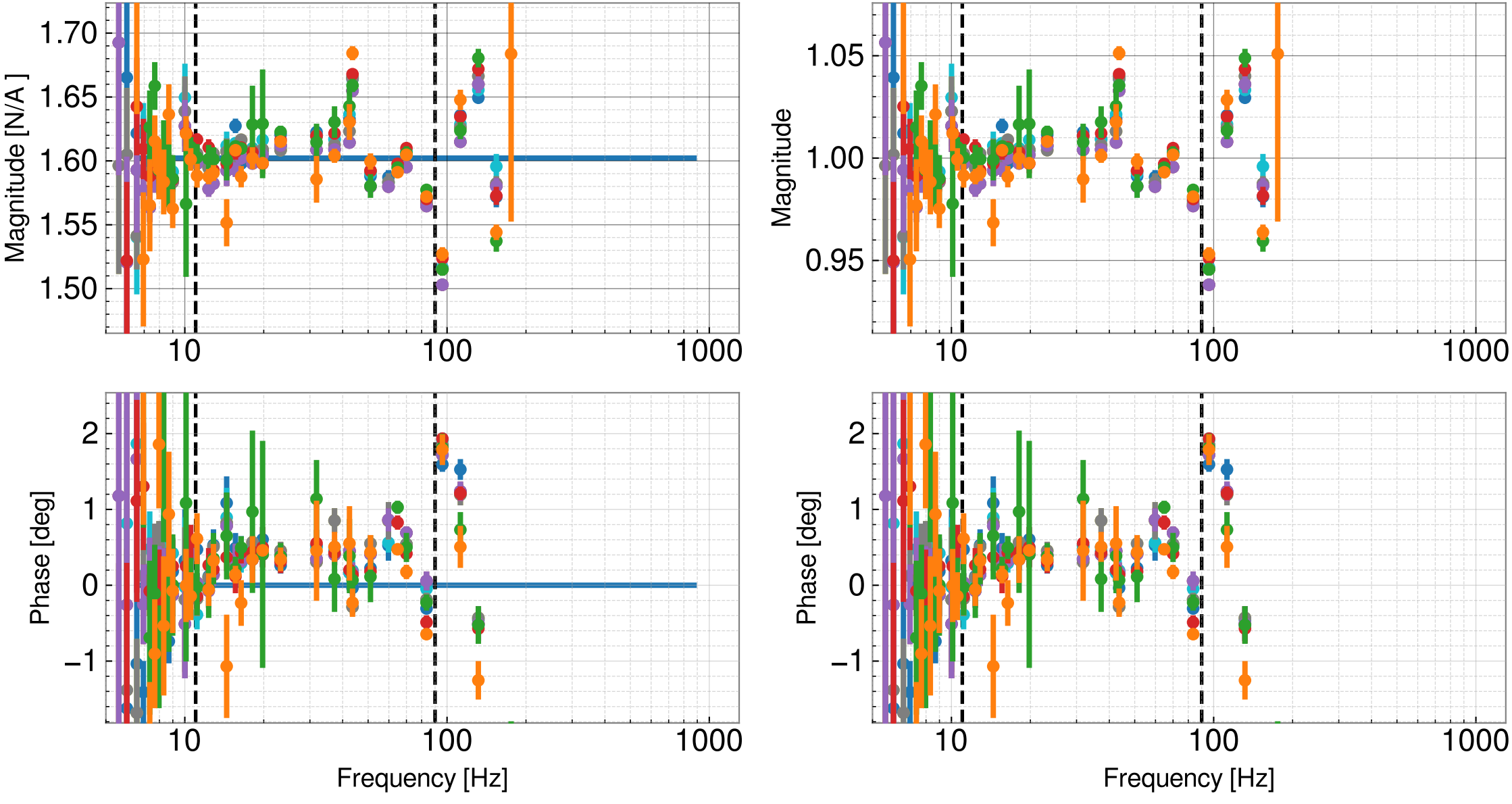
H1SUSEX L1 actuation model history (last 9 measurements)

All fixed parameters drawn from /ligo/groups/cal/H1/reports/20250628T190643Z/pydarm_H1.ini

20240315T012231Z model
20250628T190710Z measurement
20240315T012251Z measurement
20240311T214050Z measurement
20230517T154837Z measurement
20230517T154837Z measurement
20230517T154837Z measurement
20230509T062006Z measurement
20230509T062006Z measurement
20230508T171226Z measurement
20230506T173415Z measurement
MCMC Fit Range: 11 Hz to 90 Hz

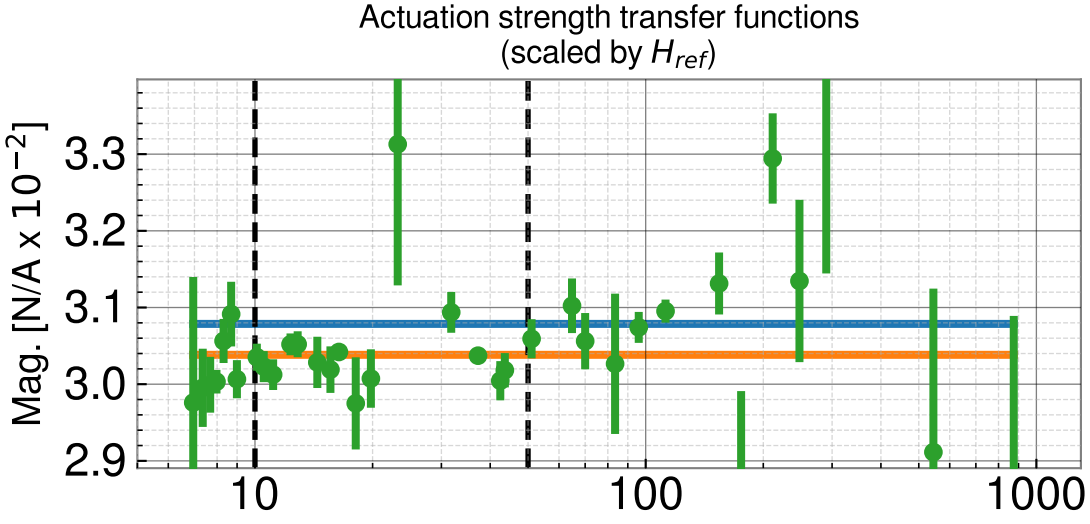
Actuation strength transfer functions
(scaled by H_{ref})

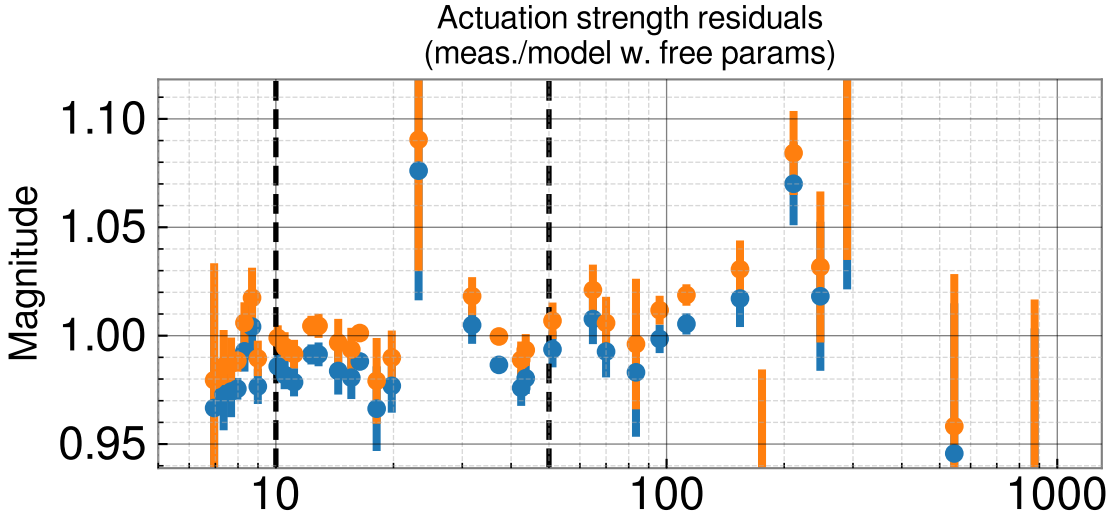
Actuation strength residuals
(meas./model w. free params)

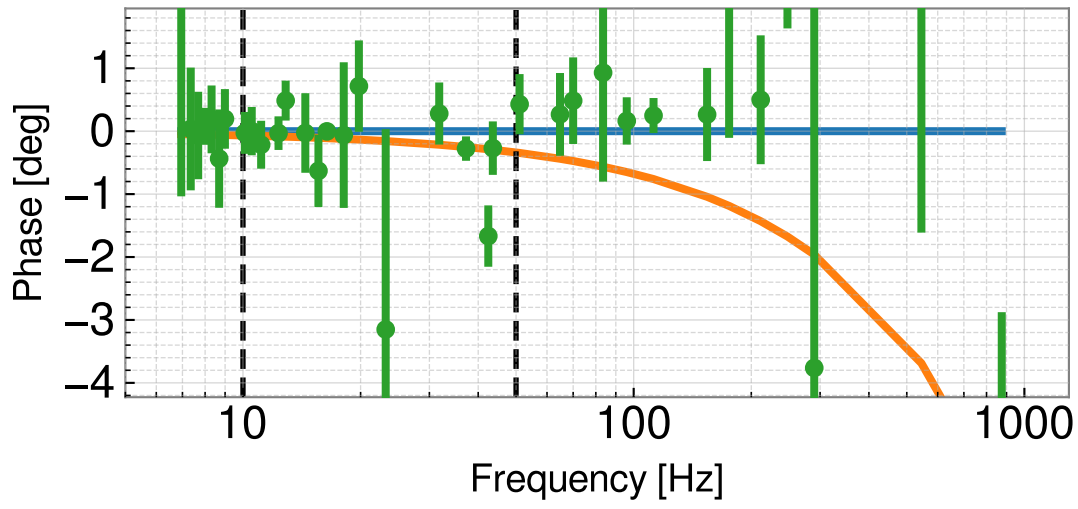


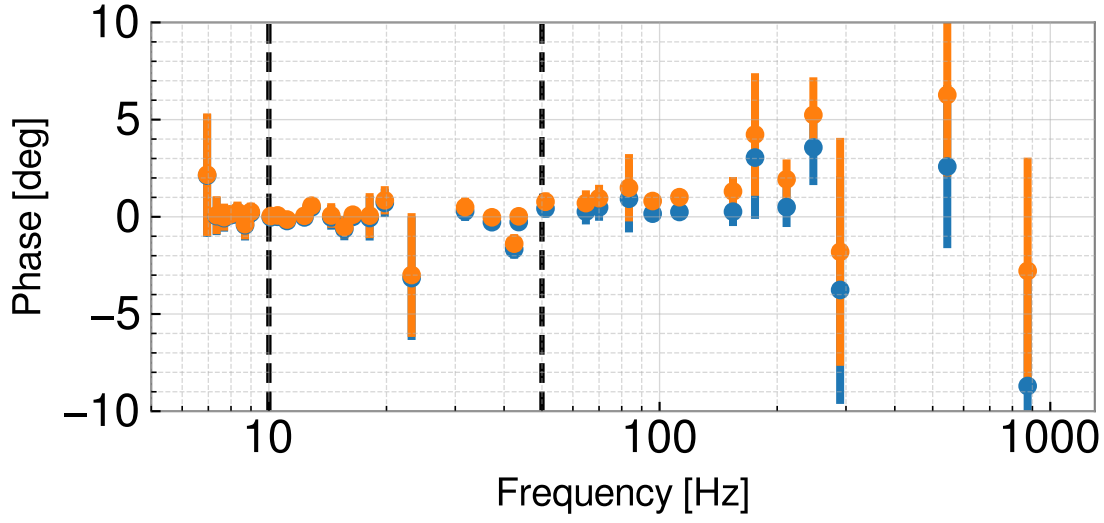
H1SUSEX L2 actuation model MCMC summary

All fixed parameters drawn from /ligo/groups/cal/H1/reports/20250628T190643Z/pydarm_H1.ini



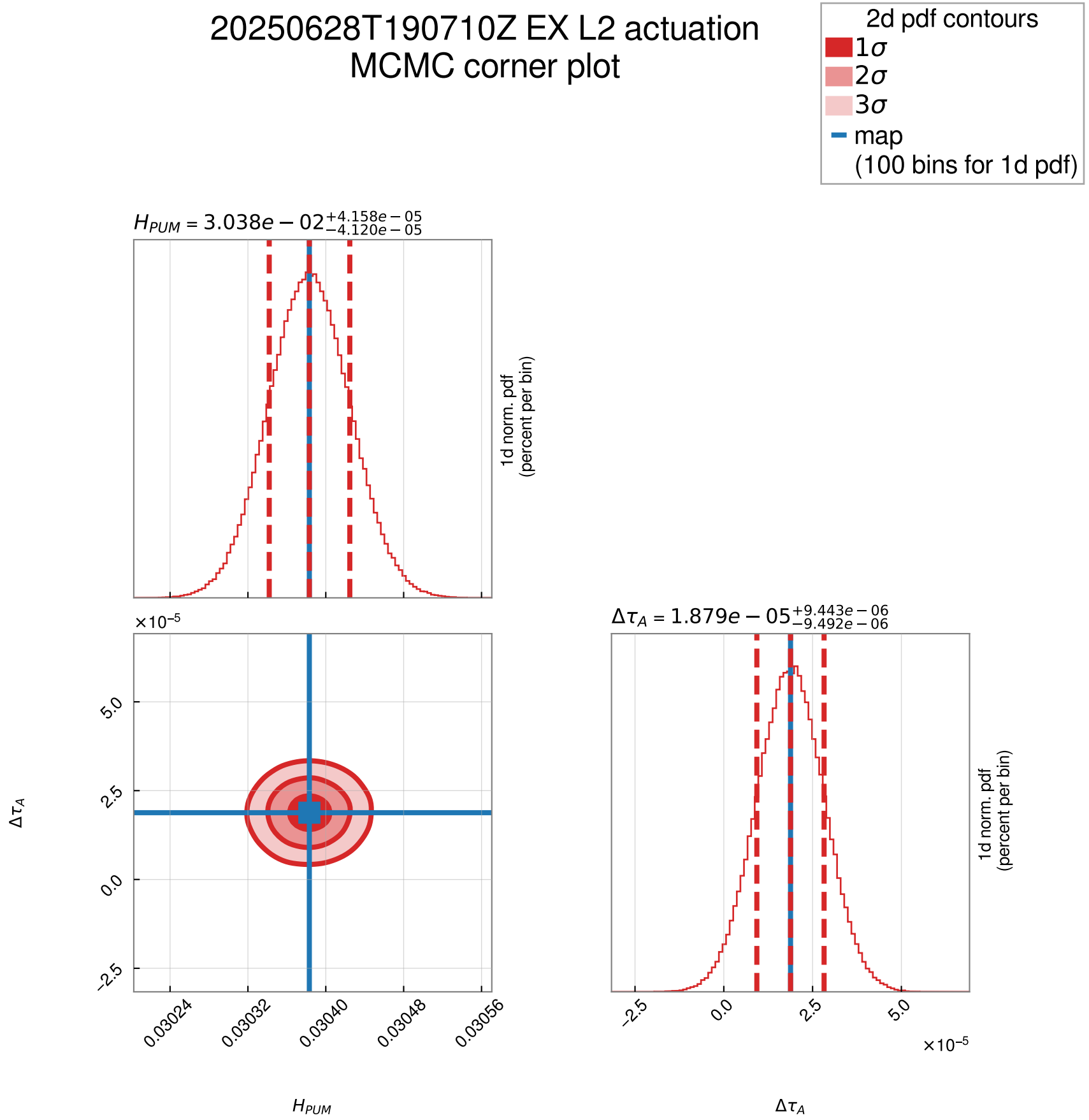






Parameter (value +/-)	value	+	-
Actuation Gain, Hap (N/A)	0.03038	4.158e-05 (0.14%)	4.12e-05 (0.14%)
Residual time delay, tau_A (s)	1.879e-05	9.443e-06 (50.24%)	9.492e-06 (50.50%)

20250628T190710Z EX L2 actuation
MCMC corner plot



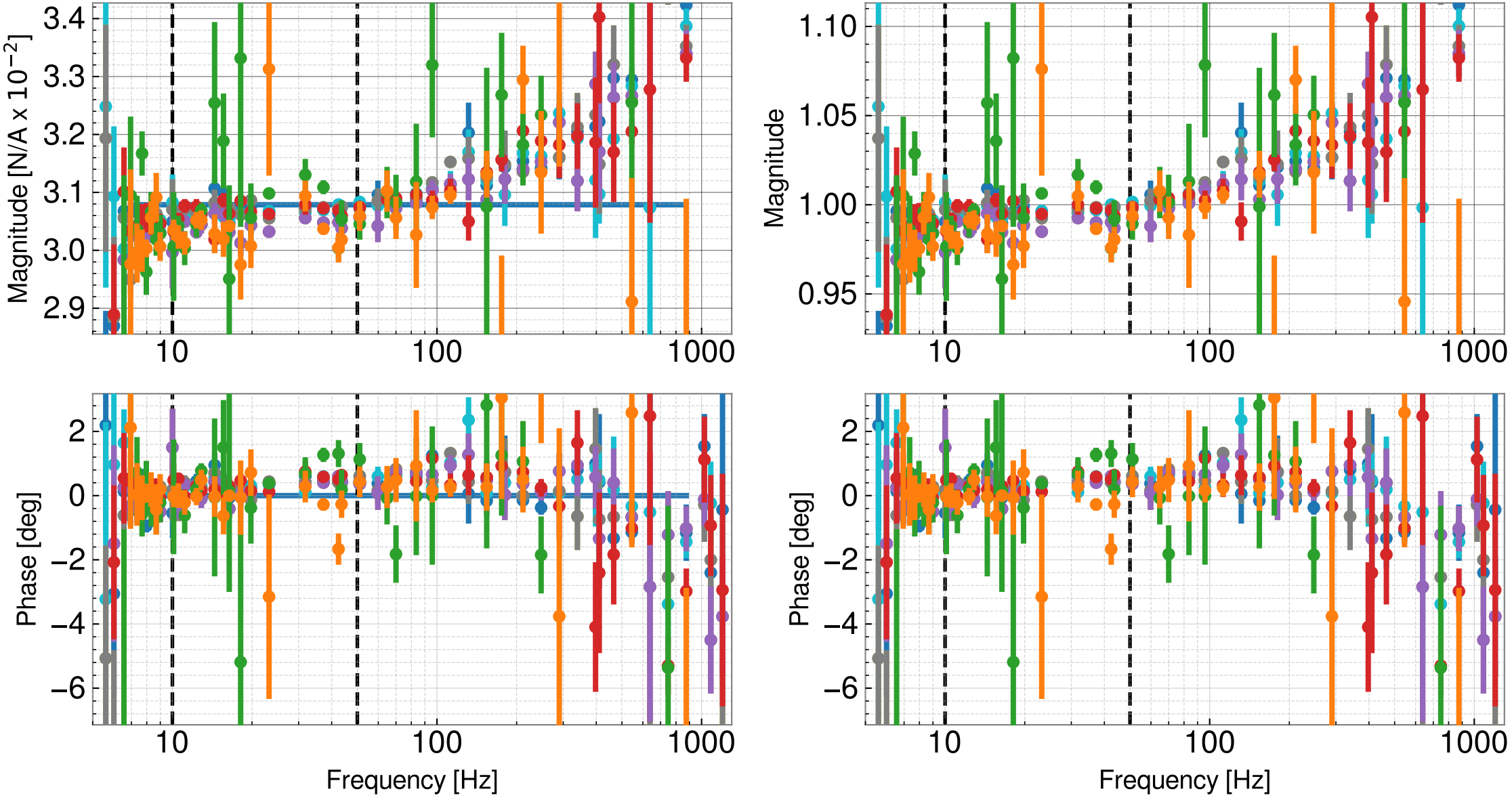
H1SUSEX L2 actuation model history (last 9 measurements)

All fixed parameters drawn from /ligo/groups/cal/H1/reports/20250628T190643Z/pydarm_H1.ini

20240315T012231Z model
20250628T190710Z measurement
20240315T012251Z measurement
20240311T214050Z measurement
20230517T161131Z measurement
20230517T161131Z measurement
20230517T161131Z measurement
20230509T064300Z measurement
20230509T064300Z measurement
20230508T173520Z measurement
20230506T175709Z measurement
MCMC Fit Range: 10 Hz to 50 Hz

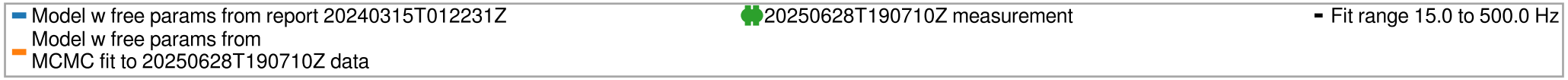
Actuation strength transfer functions
(scaled by H_{ref})

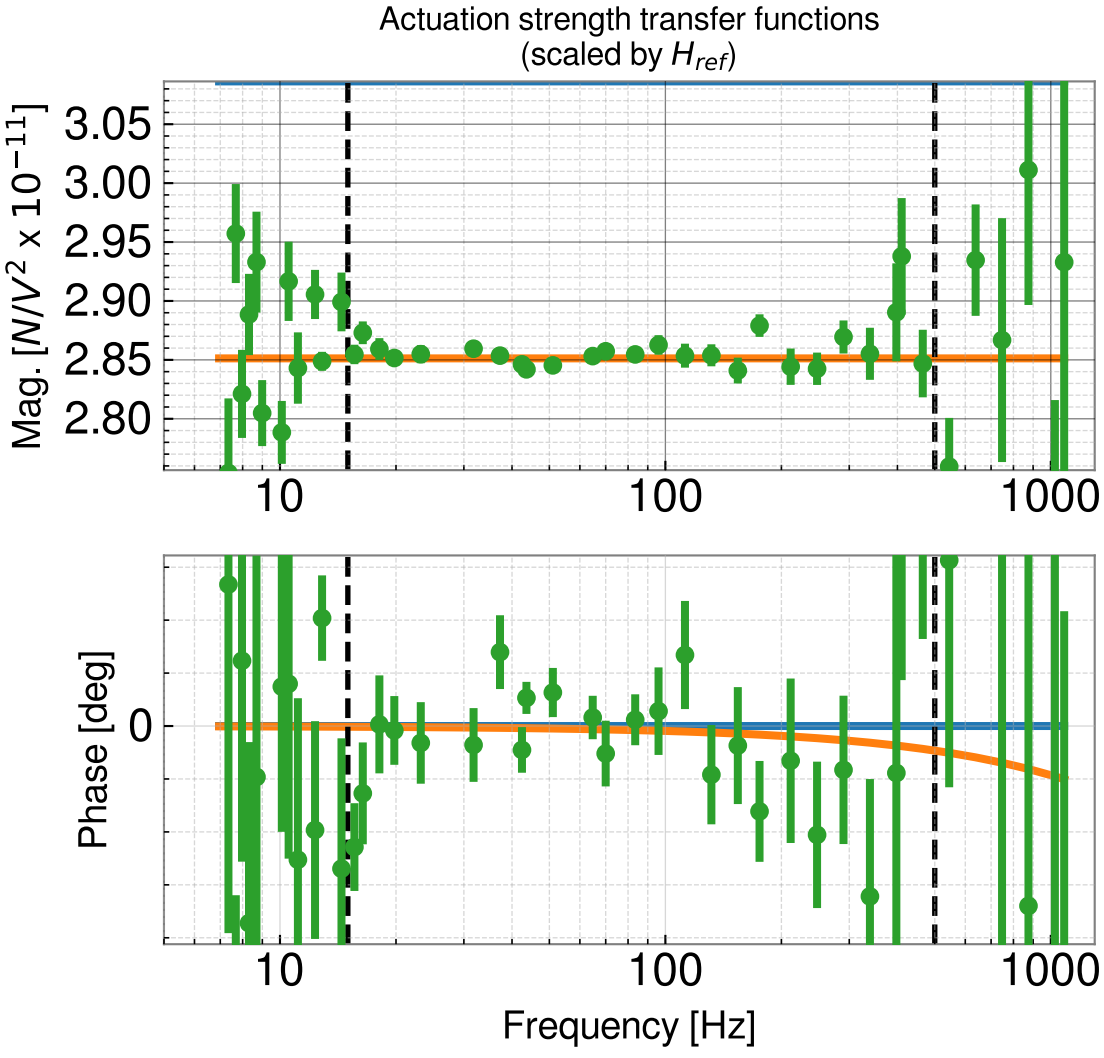
Actuation strength residuals
(meas./model w. free params)

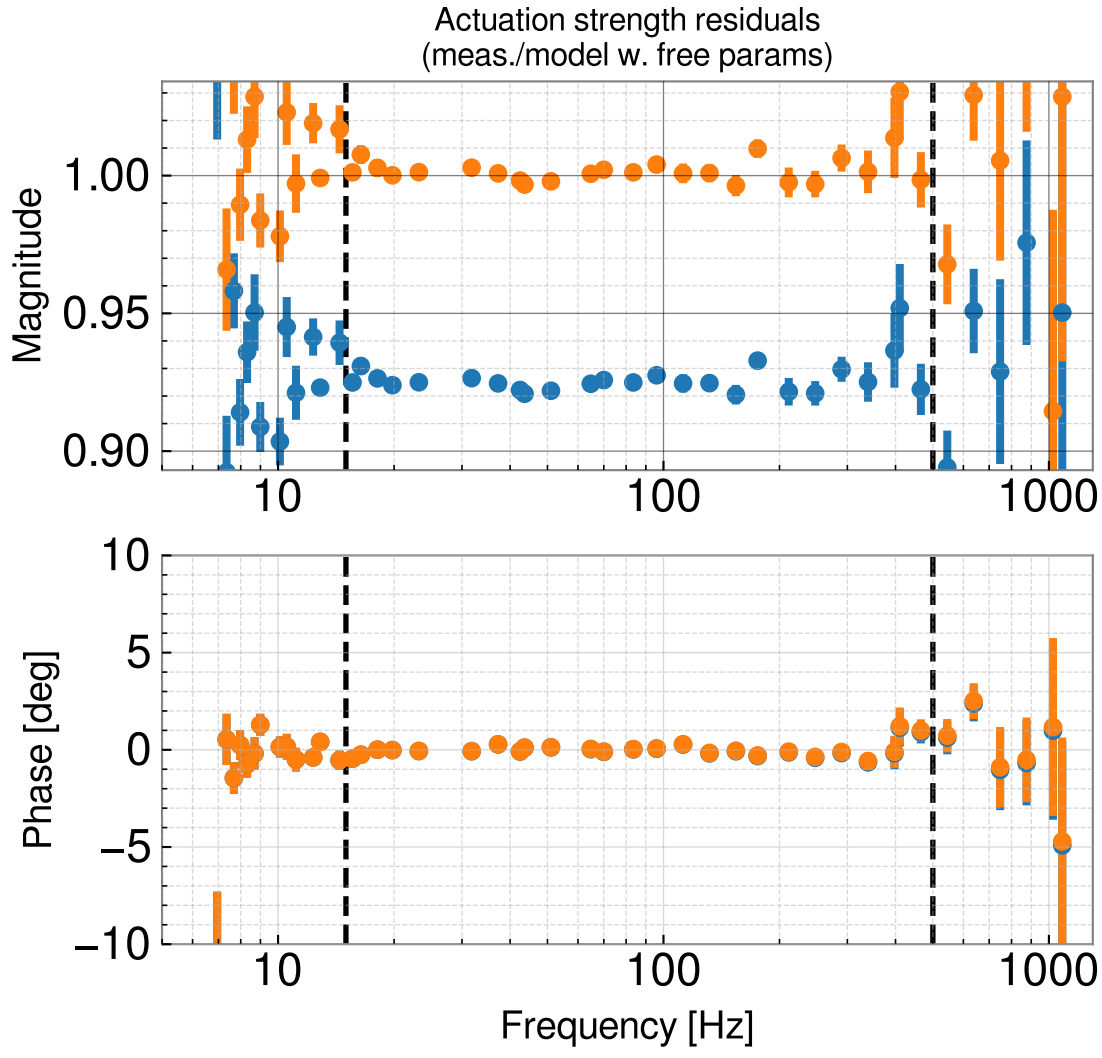


H1SUSEX L3 actuation model MCMC summary

All fixed parameters drawn from /ligo/groups/cal/H1/reports/20250628T190643Z/pydarm_H1.ini

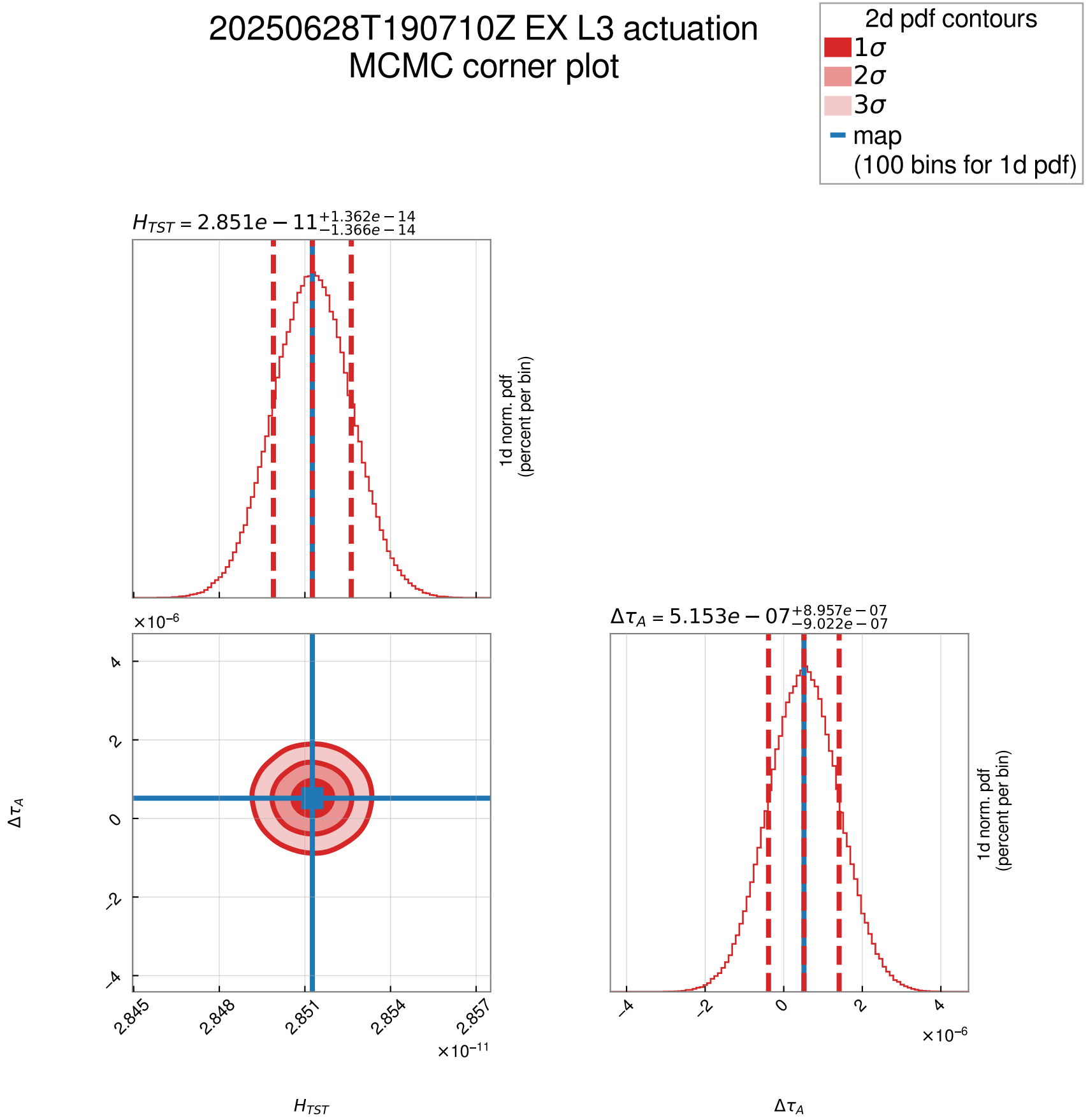






Parameter (value +/-)	value	+	-
Actuation Gain, Hat (N/V**2)	2.851e-11	1.362e-14 (0.05%)	1.366e-14 (0.05%)
Residual time delay, tau_A (s)	5.153e-07	8.957e-07 (173.80%)	9.022e-07 (175.07%)

20250628T190710Z EX L3 actuation
MCMC corner plot



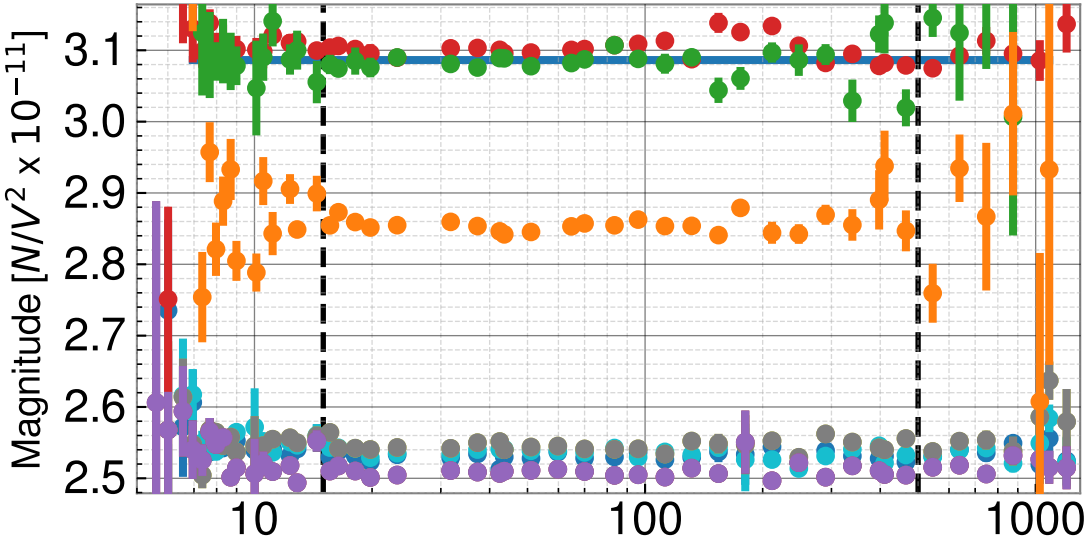
H1SUSEX L3 actuation model history (last 9 measurements)

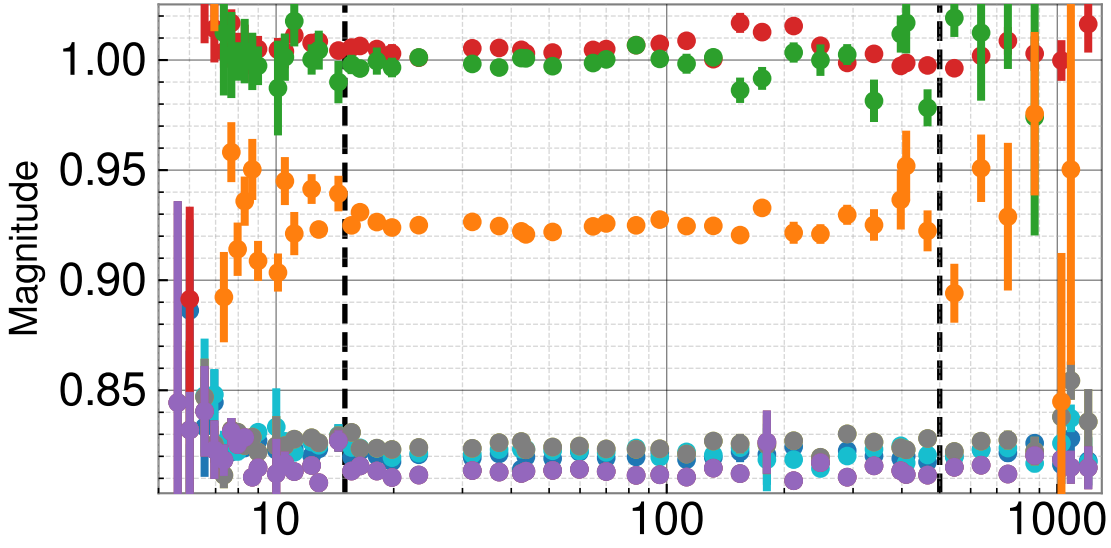
All fixed parameters drawn from /ligo/groups/cal/H1/reports/20250628T190643Z/pydarm_H1.ini

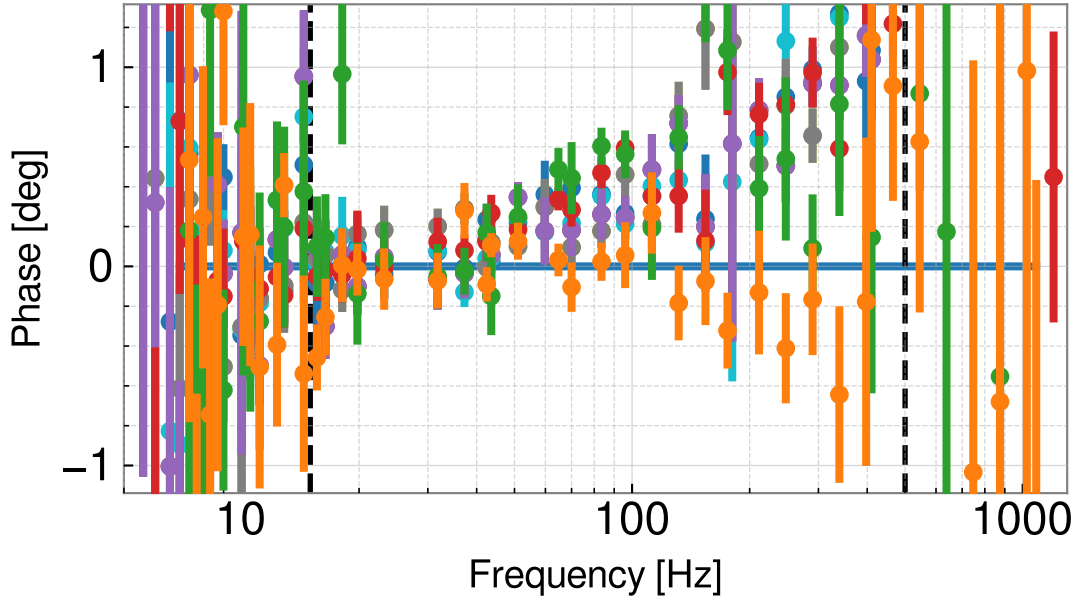
20240315T012231Z model
20250628T190710Z measurement
20240315T012251Z measurement
20240311T214051Z measurement
20230517T163635Z measurement
20230517T163635Z measurement
20230517T163635Z measurement
20230509T070804Z measurement
20230509T070804Z measurement
20230509T070804Z measurement
20230508T180024Z measurement
20230506T182213Z measurement
MCMC Fit Range: 15 Hz to 500 Hz

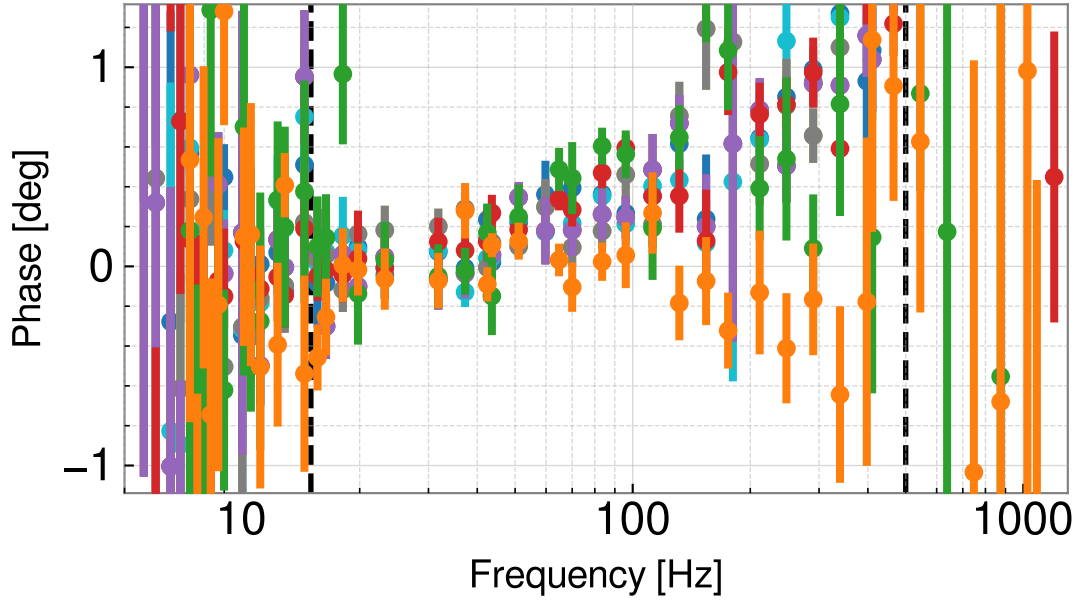
Actuation strength transfer functions
(scaled by H_{ref})

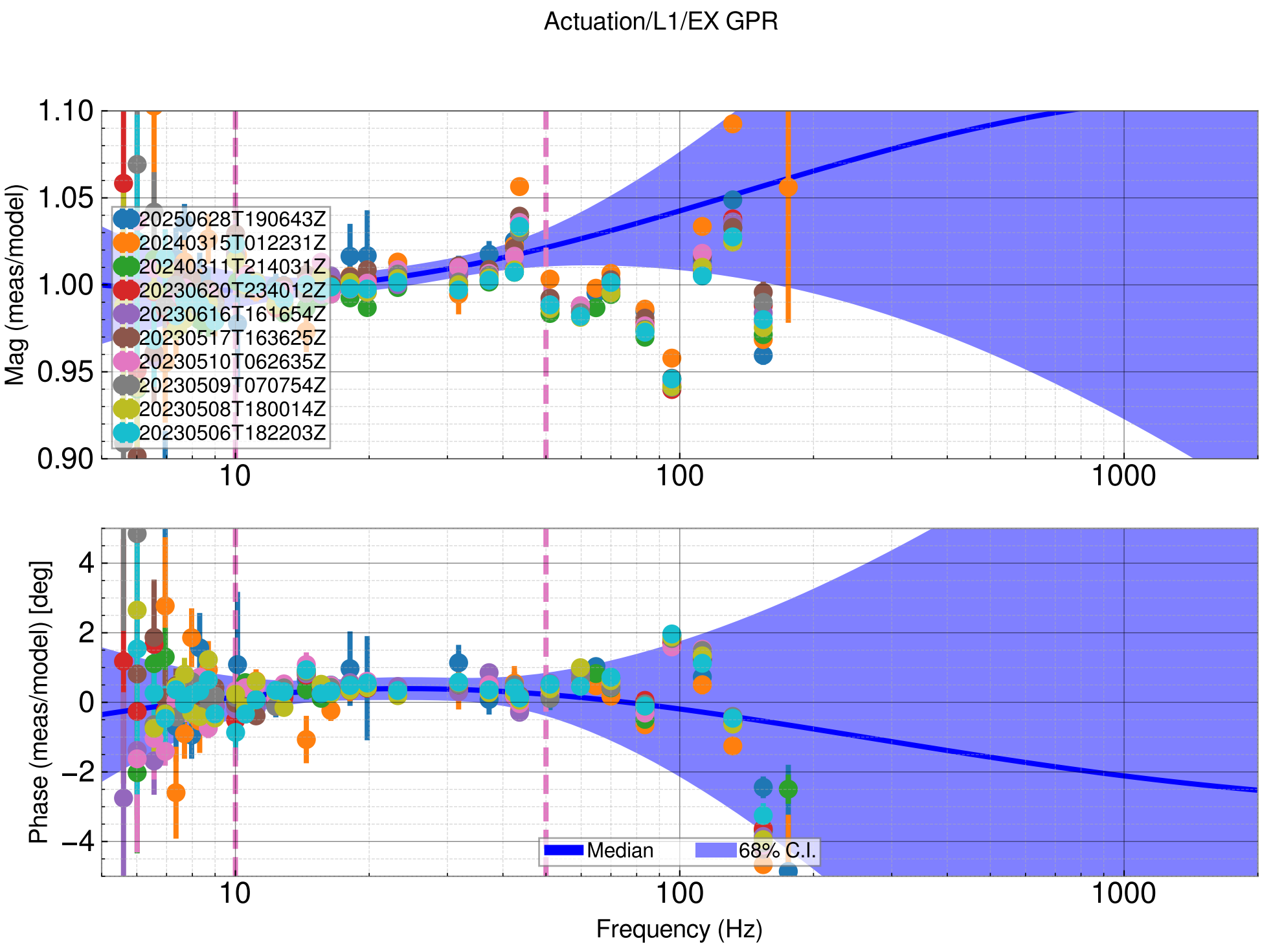
Actuation strength residuals
(meas./model w. free params)

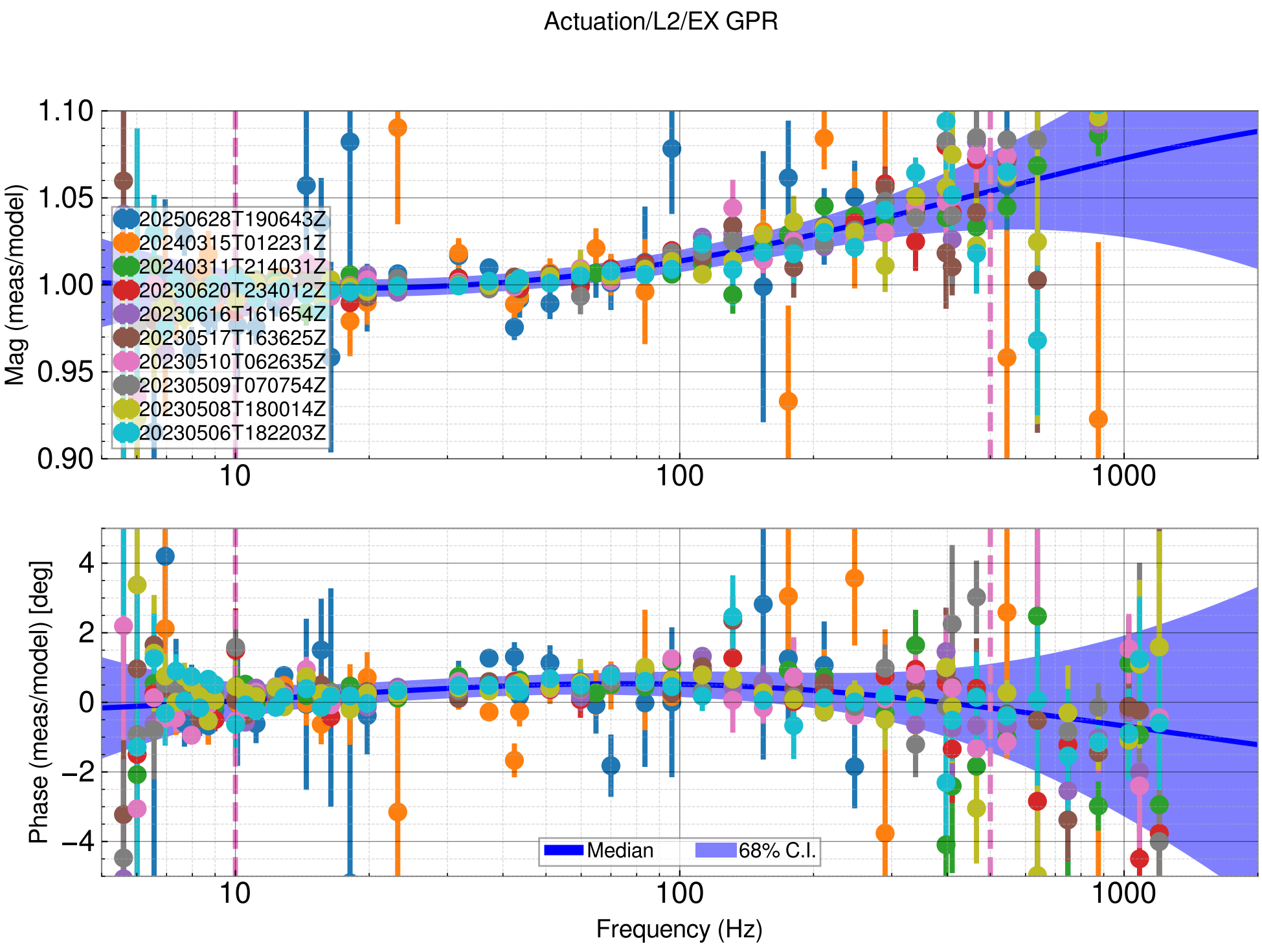


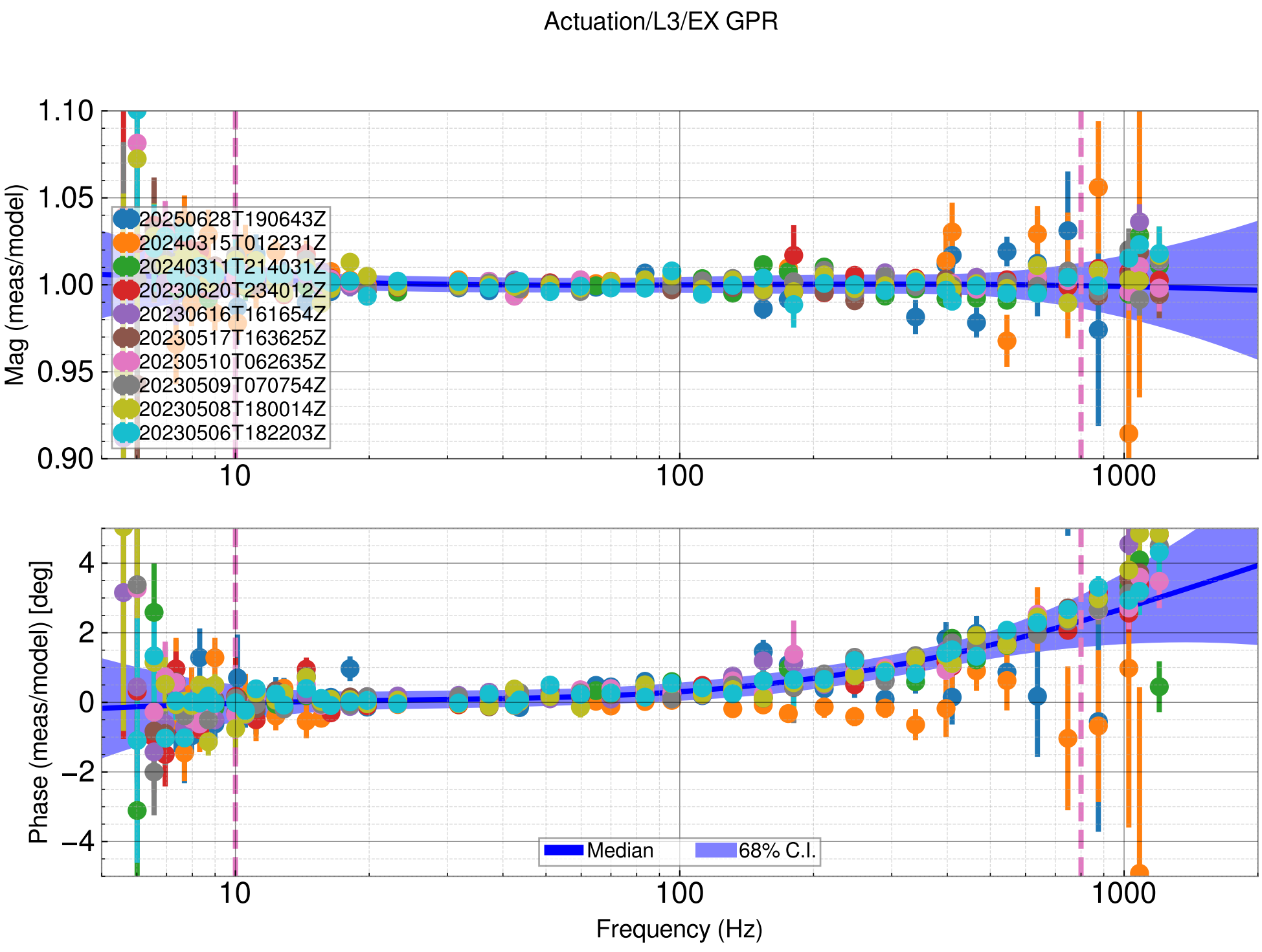







Actuation/L1/EX GPR
Mag (meas/model)
1.10
1.05
1.00
0.95
0.90
20250628T190643Z
20240315T012231Z
20240311T214031Z
20230620T234012Z
20230616T161654Z
20230517T163625Z
20230510T062635Z
20230509T070754Z
20230508T180014Z
20230506T182203Z
10
100
1000
Phase (meas/model) [deg]
4
2
0
−2
−4
Median
68% C.I.
10
100
1000
Frequency (Hz)


Actuation/L2/EX GPR
Mag (meas/model)
1.10
1.05
1.00
0.95
0.90
20250628T190643Z
20240315T012231Z
20240311T214031Z
20230620T234012Z
20230616T161654Z
20230517T163625Z
20230510T062635Z
20230509T070754Z
20230508T180014Z
20230506T182203Z
10
100
1000
Phase (meas/model) [deg]
4
2
0
−2
−4
Median
68% C.I.
10
100
1000
Frequency (Hz)


Actuation/L3/EX GPR
Mag (meas/model)
1.10
1.05
1.00
0.95
0.90
20250628T190643Z
20240315T012231Z
20240311T214031Z
20230620T234012Z
20230616T161654Z
20230517T163625Z
20230510T062635Z
20230509T070754Z
20230508T180014Z
20230506T182203Z
10
100
1000
Phase (meas/model) [deg]
4
2
0
−2
−4
Median
68% C.I.
10
100
1000
Frequency (Hz)