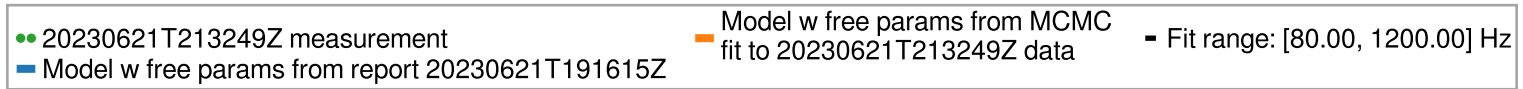
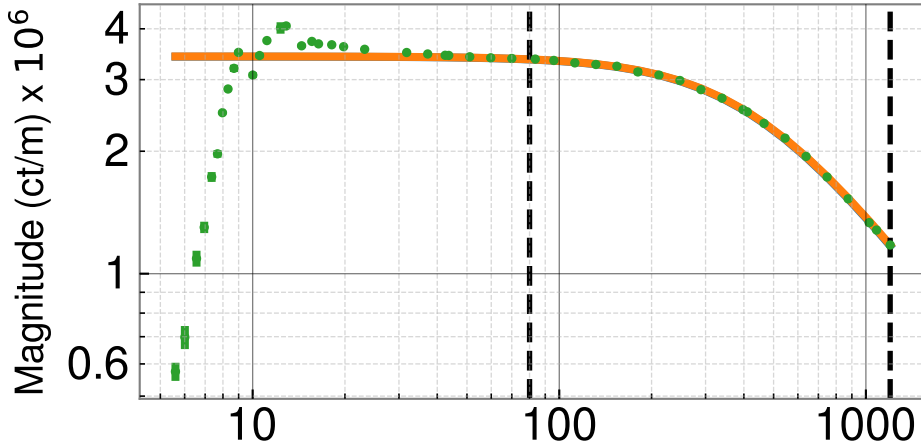


# H1 sensing model MCMC summary

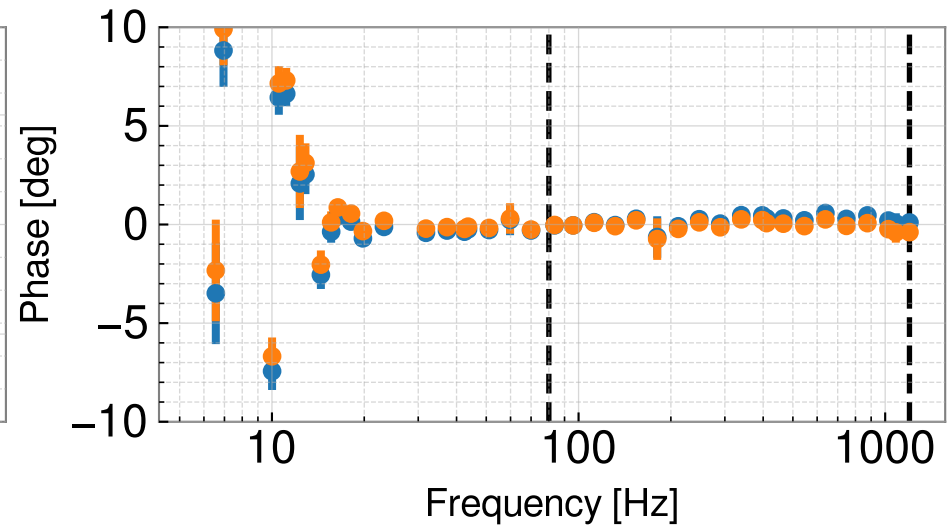
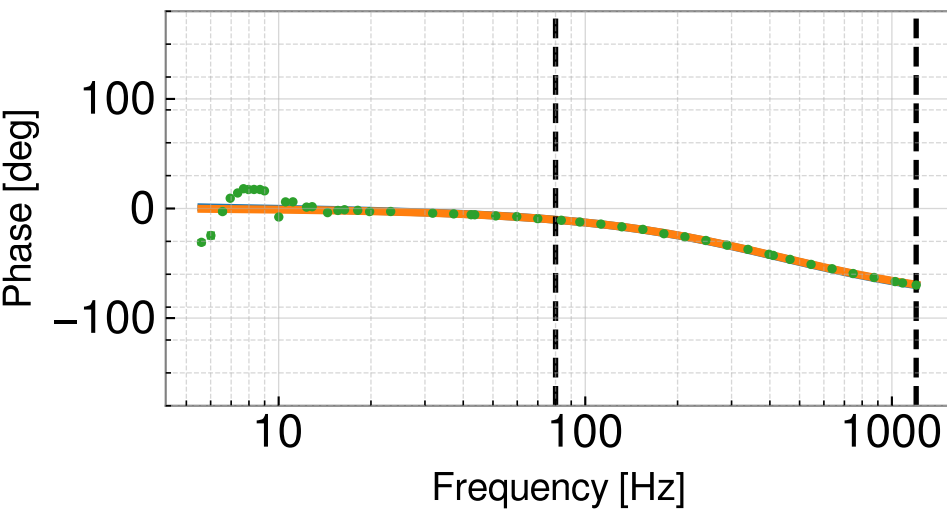
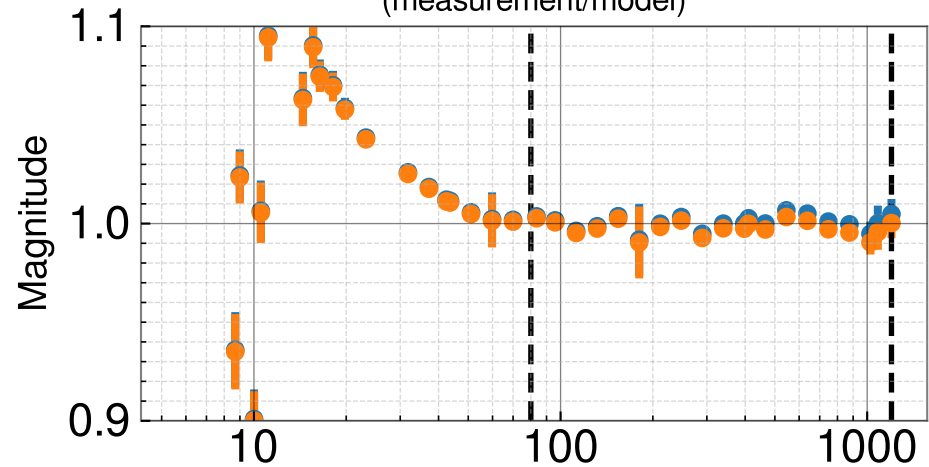
All fixed parameters drawn from 20230621T211522Z/pydarm\_H1.ini



Optical response transfer functions  
(scaled by  $1/C_R$ )

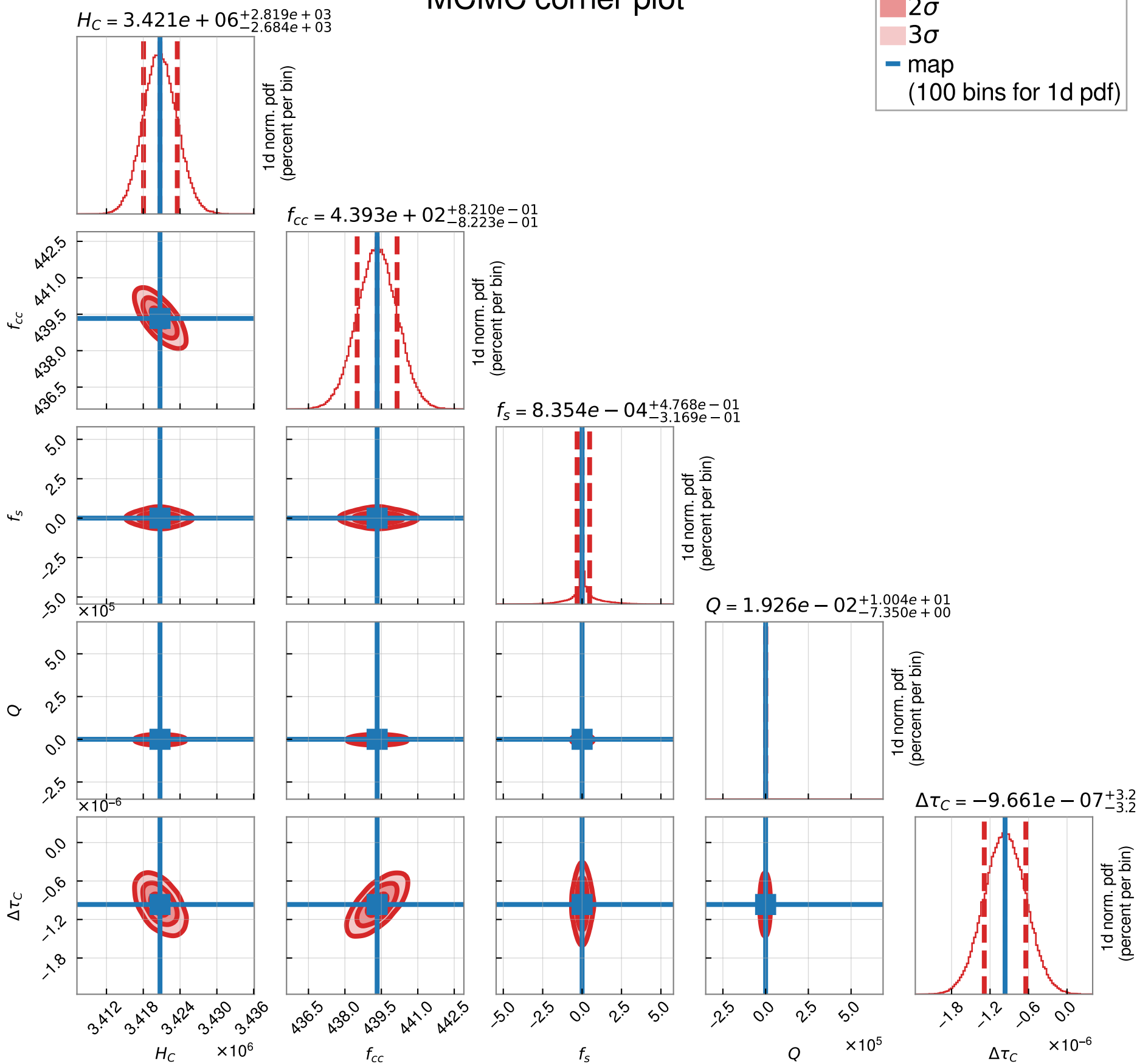
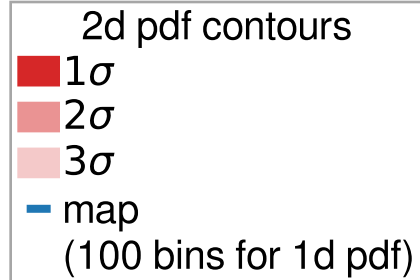


Optical response residuals  
(measurement/model)



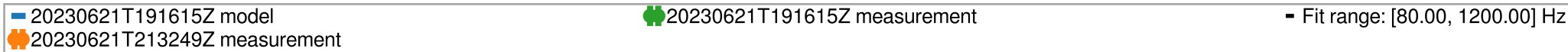
Parameter	(value +/-)   value	+	-
Optical gain, H_c (ct/m)	3.421e+06	2819 (0.08%)	2684 (0.08%)
Cavity_pole, f_cc (Hz)	439.3	0.821 (0.19%)	0.8223 (0.19%)
Detuned SRC spring frequency, f_s (Hz)	0.0008354	0.4768 (57070.69%)	0.3169 (37940.18%)
Detuned SRC spring quality factor, Q_s	0.01926	10.04 (52130.58%)	7.35 (38155.76%)
Residual time delay, tau_c (s)	-9.661e-07	3.236e-07 (-33.49%)	3.241e-07 (-33.55%)

# 20230621T213249Z sensing function MCMC corner plot

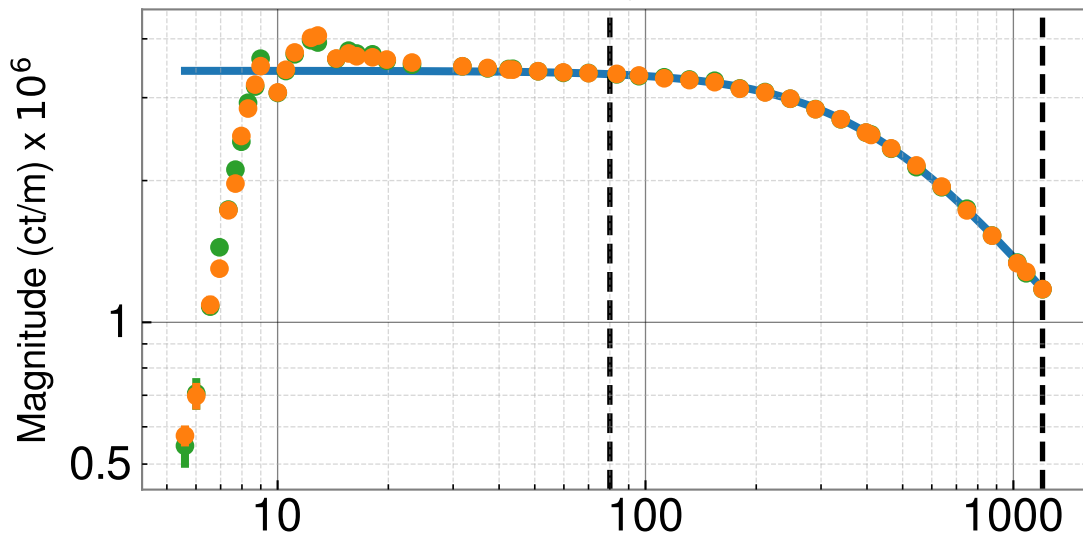


# H1 sensing model history

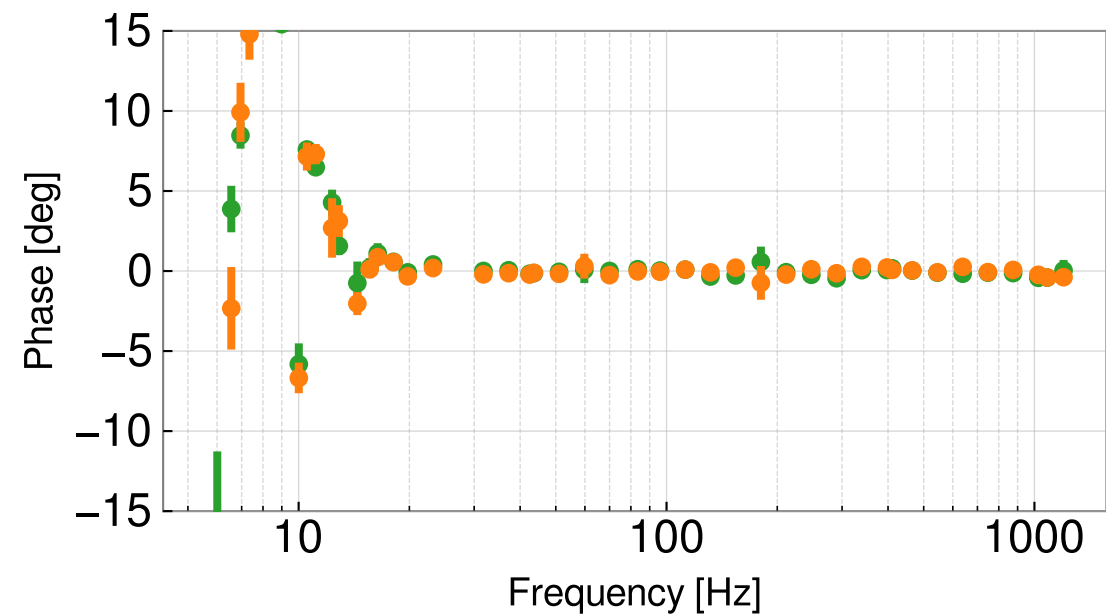
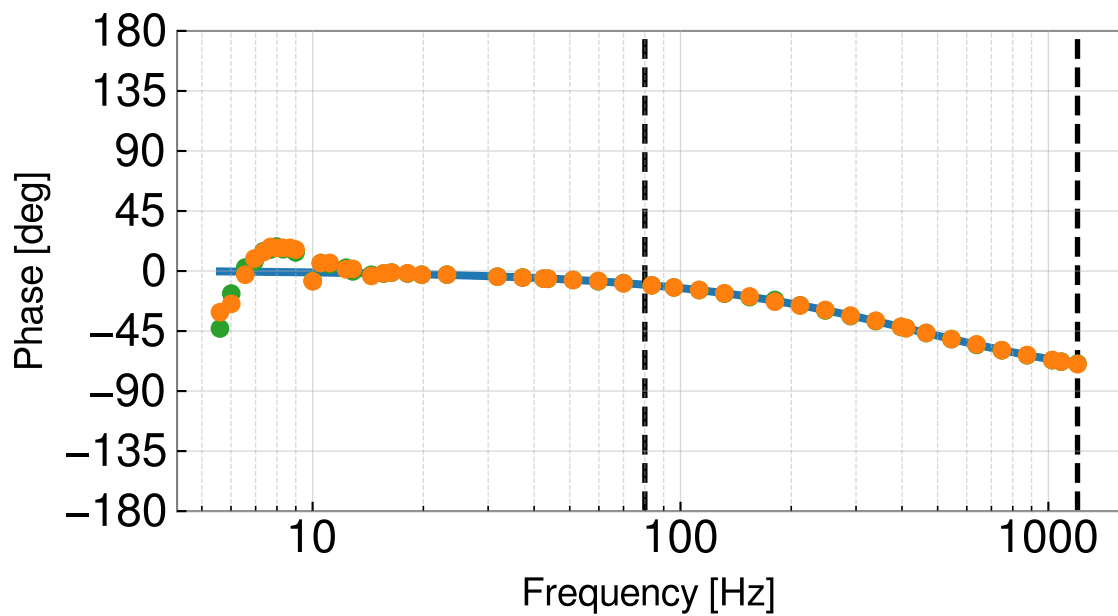
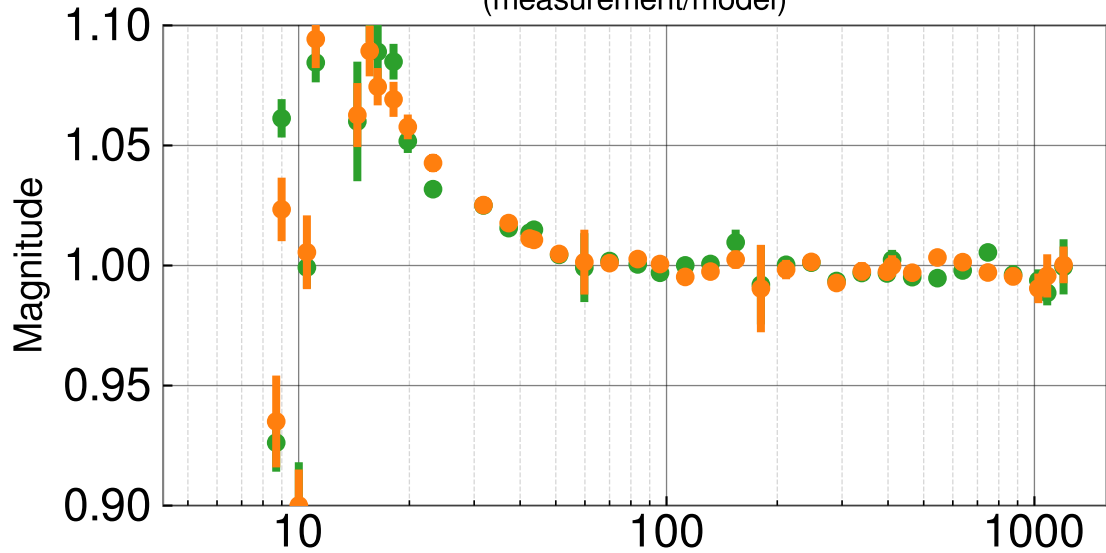
All fixed parameters drawn from 20230621T211522Z/pydarm\_H1.ini



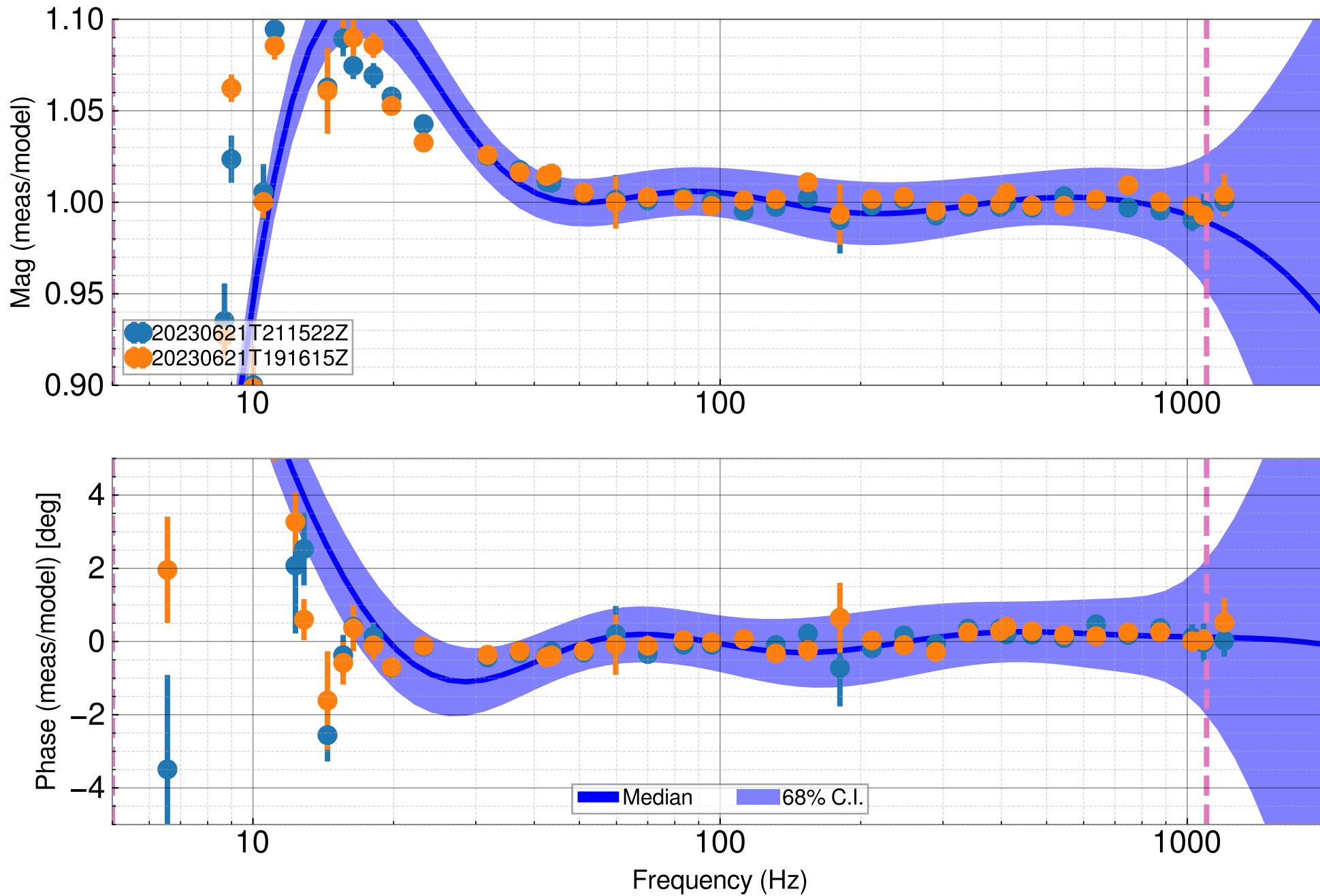
Optical response transfer functions  
(scaled by  $1/C_R$ )



Optical response residuals  
(measurement/model)

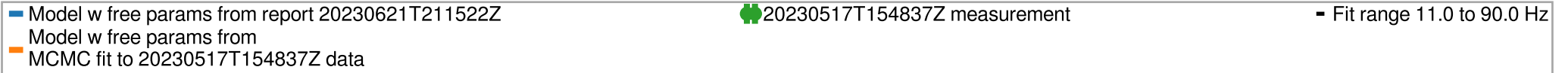


# Sensing GPR

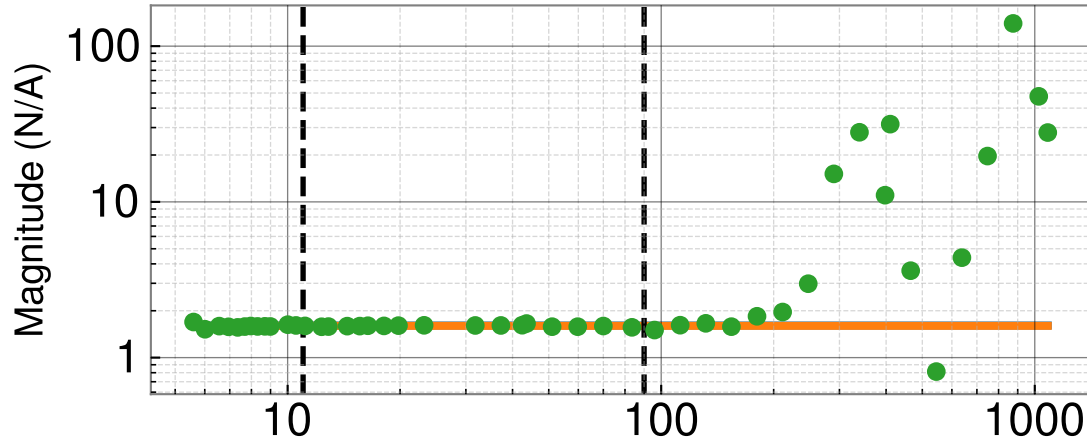


# H1SUSEX L1 actuation model MCMC summary

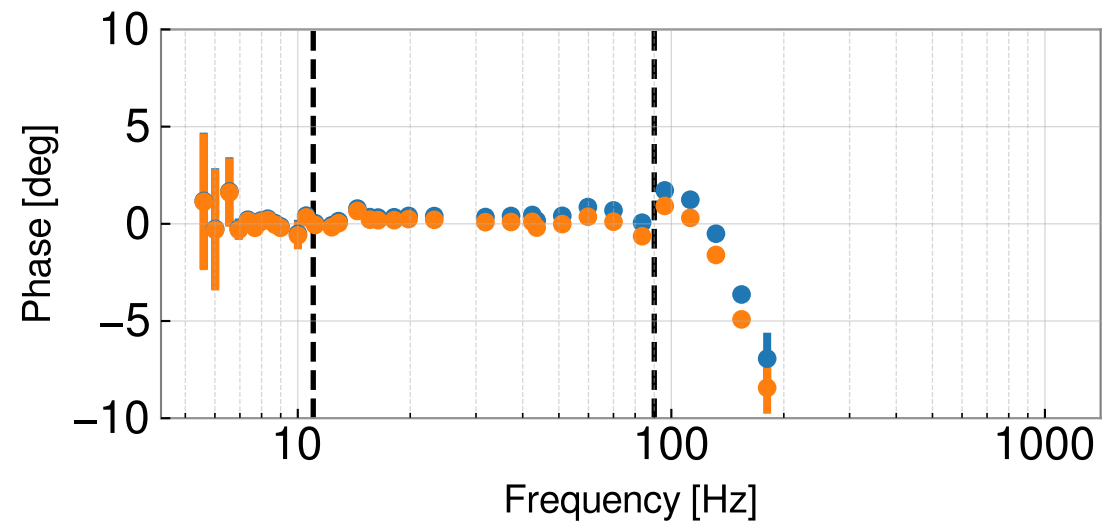
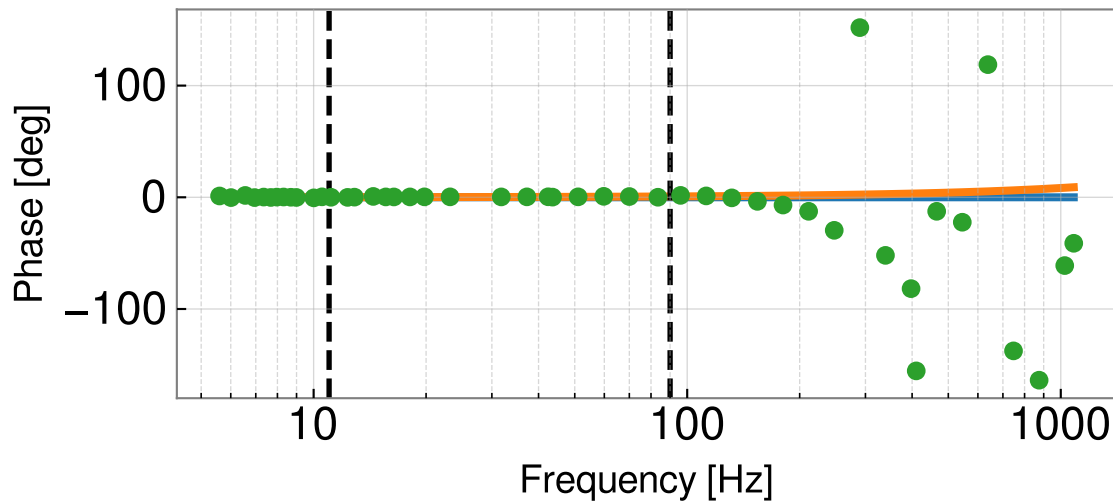
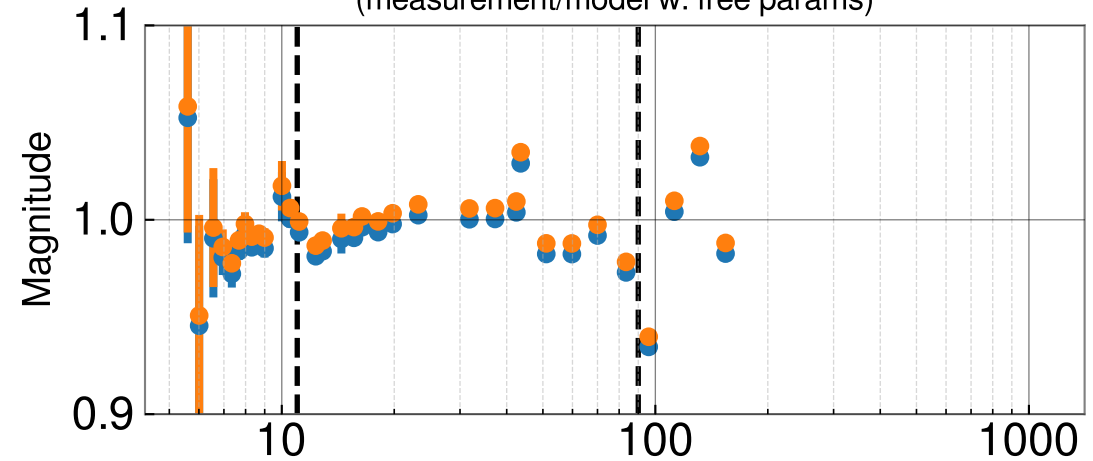
All fixed parameters drawn from 20230621T211522Z/pydarm\_H1.ini



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

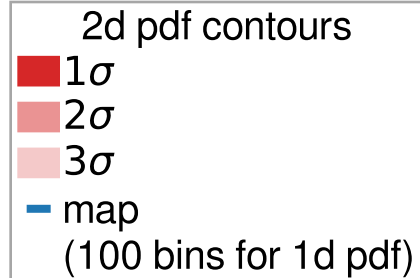


Actuation strength residuals  
(measurement/model w. free params)

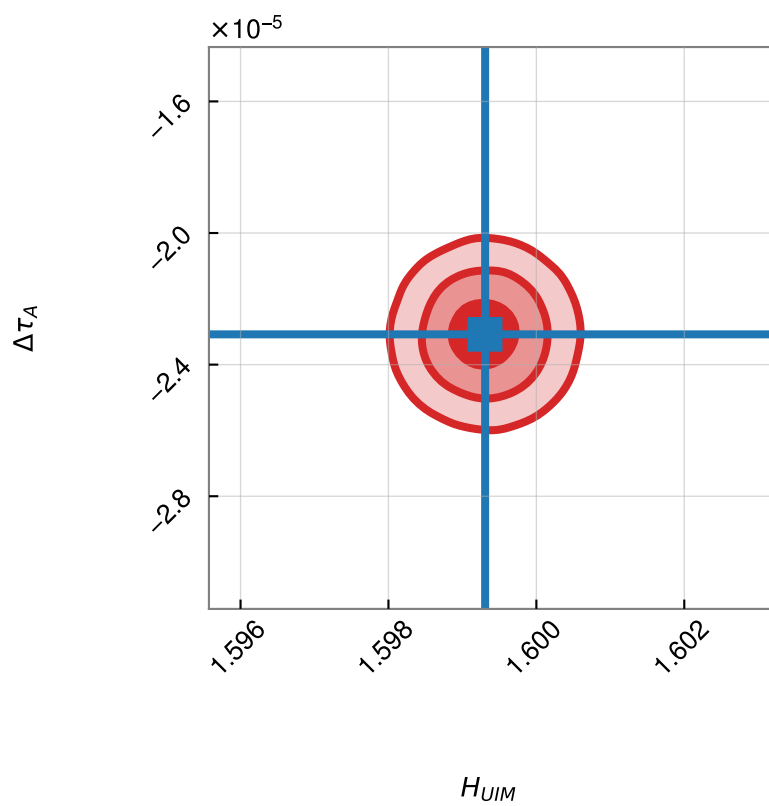
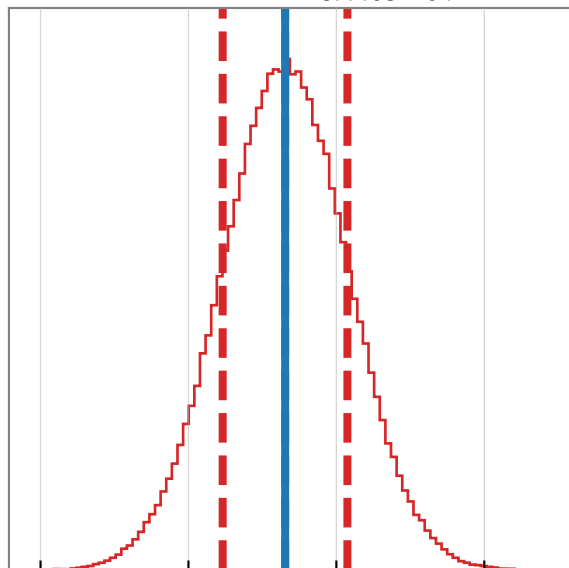


Parameter	(value +/-)   value	+	-
Actuation Gain, Hau (N/A)	1.599	0.0008418 (0.05%)	0.0008446 (0.05%)
Residual time delay, tau_A (s)	-2.308e-05	1.901e-06 (-8.24%)	1.899e-06 (-8.23%)

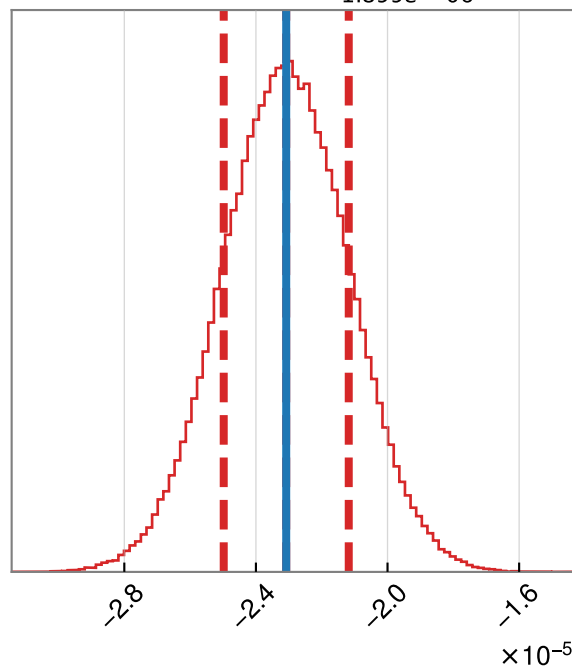
# 20230517T154837Z EX L1 actuation MCMC corner plot



$$H_{UIM} = 1.599e + 00^{+8.418e-04}_{-8.446e-04}$$

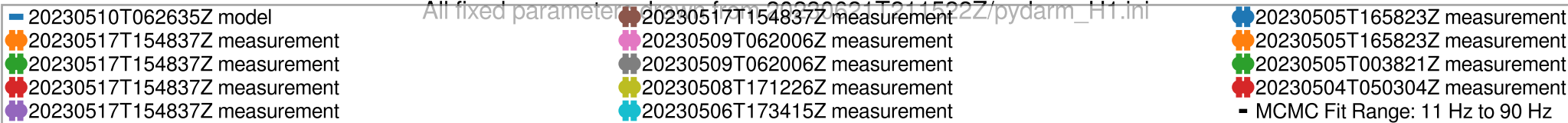


$$\Delta\tau_A = -2.308e - 05^{+1.901e-06}_{-1.899e-06}$$

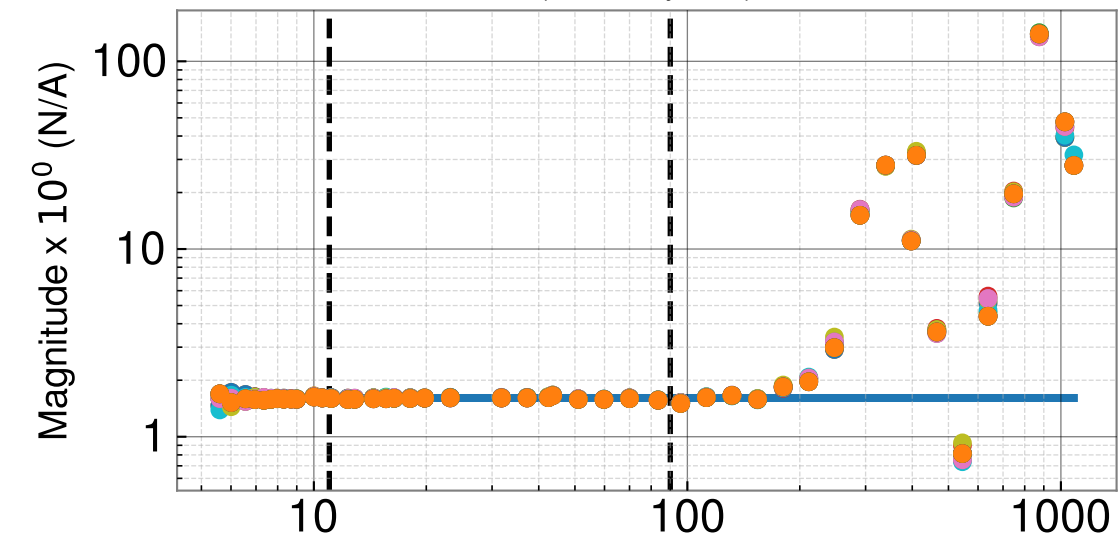


# H1SUSEX L1 actuation model history

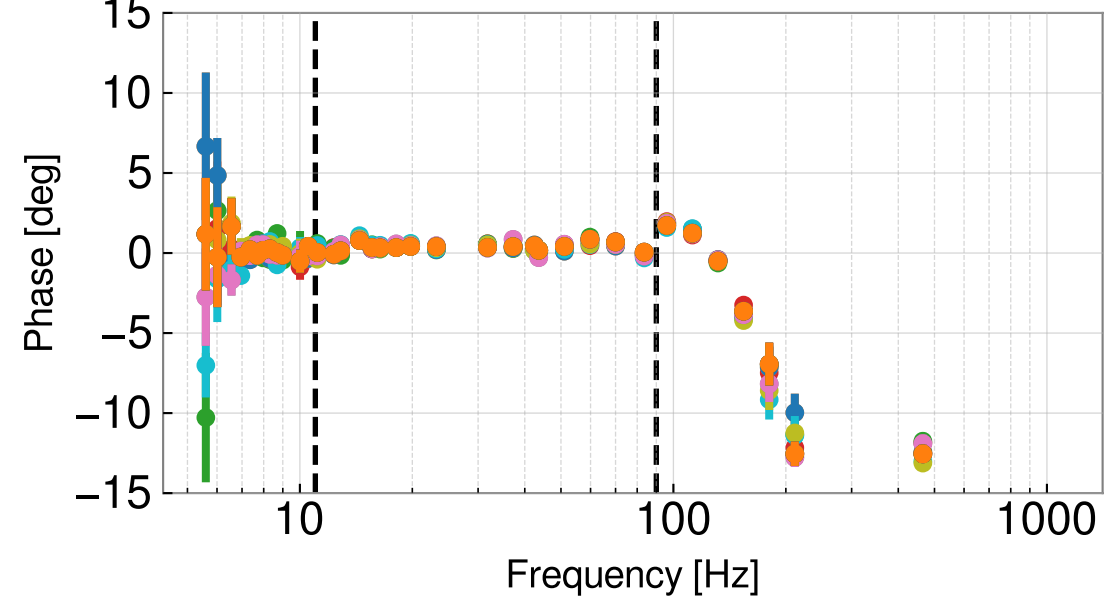
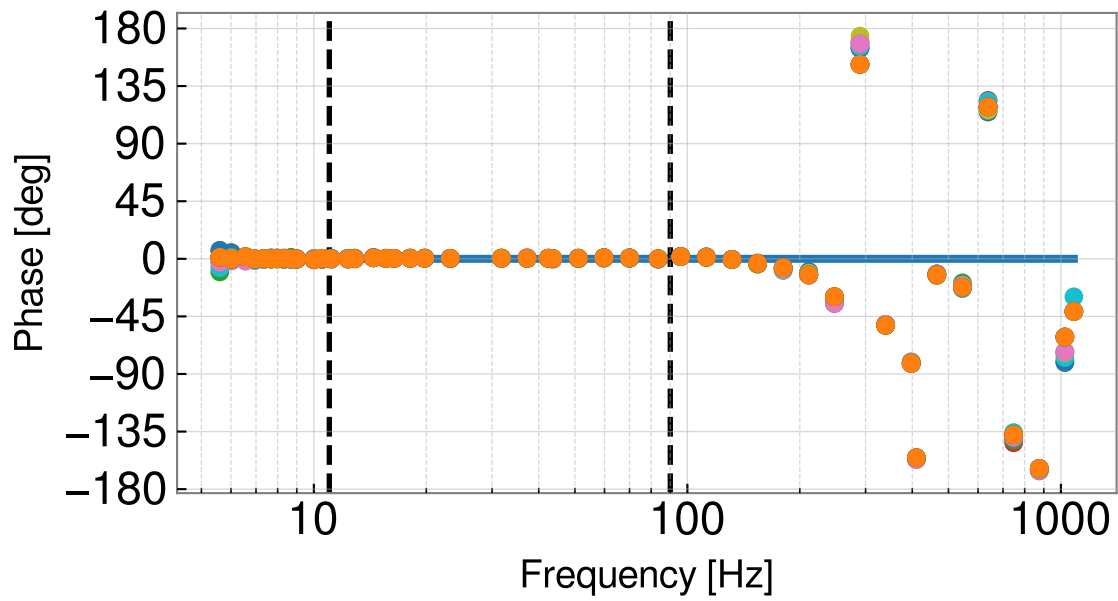
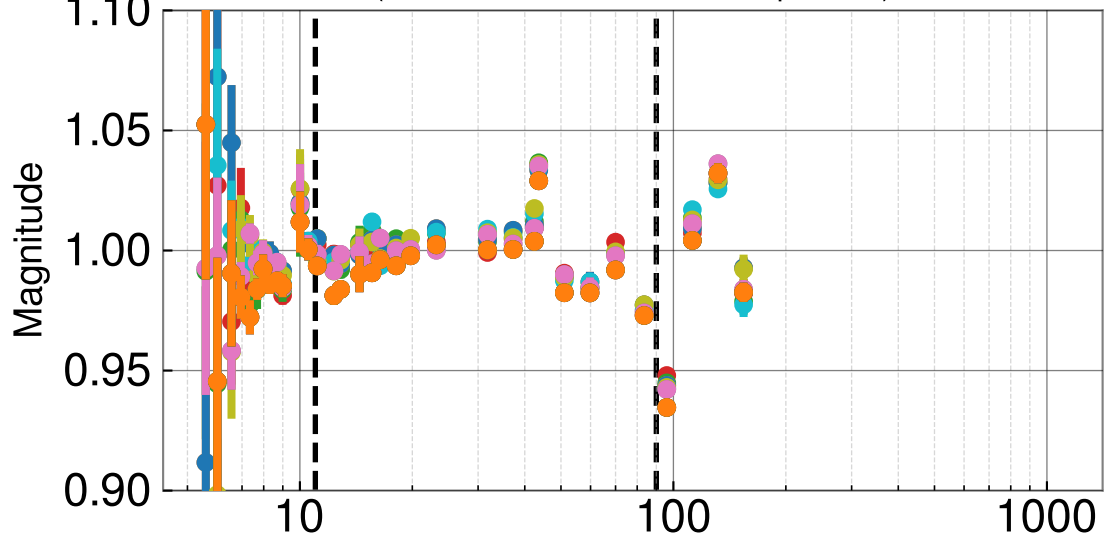
All fixed parameters from 2022021T211522Z/pydarm\_H1.ini



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



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

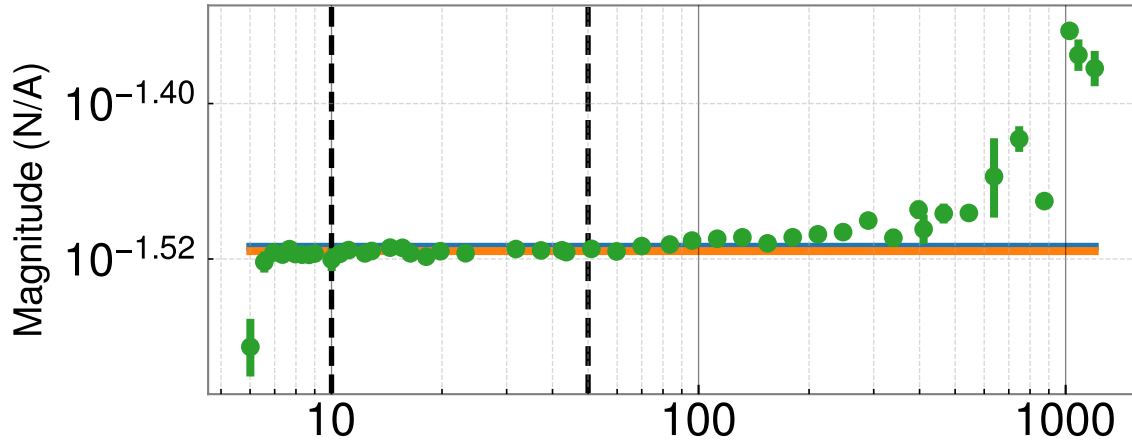


# H1SUSEX L2 actuation model MCMC summary

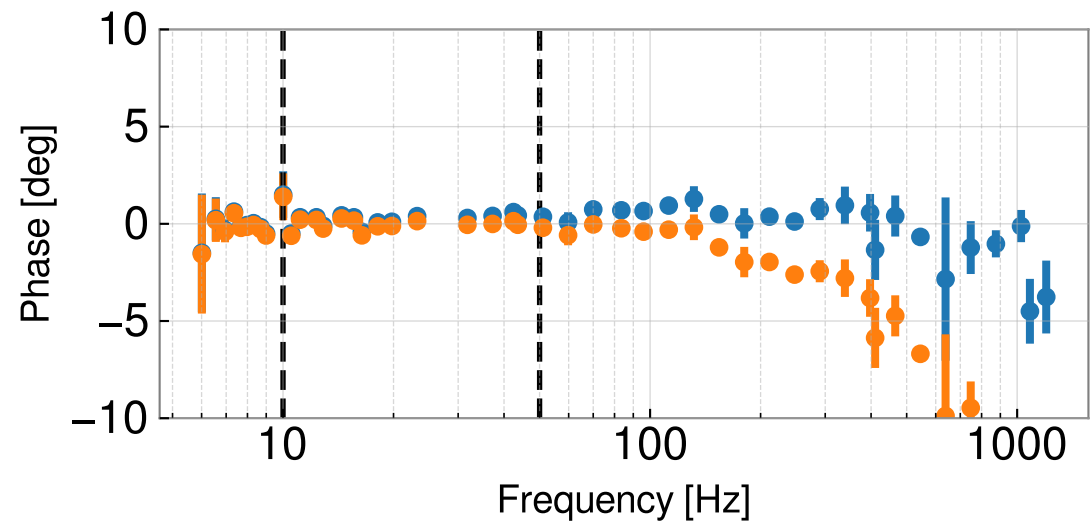
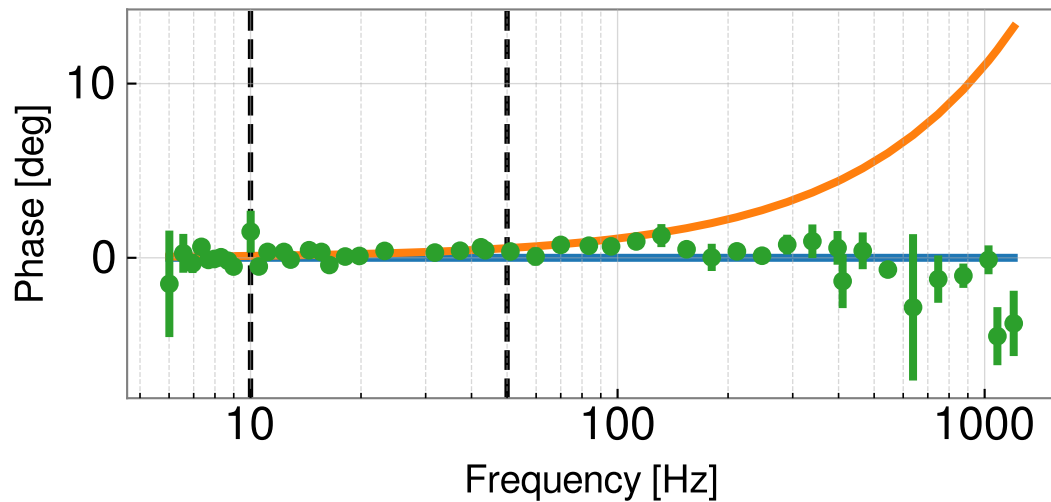
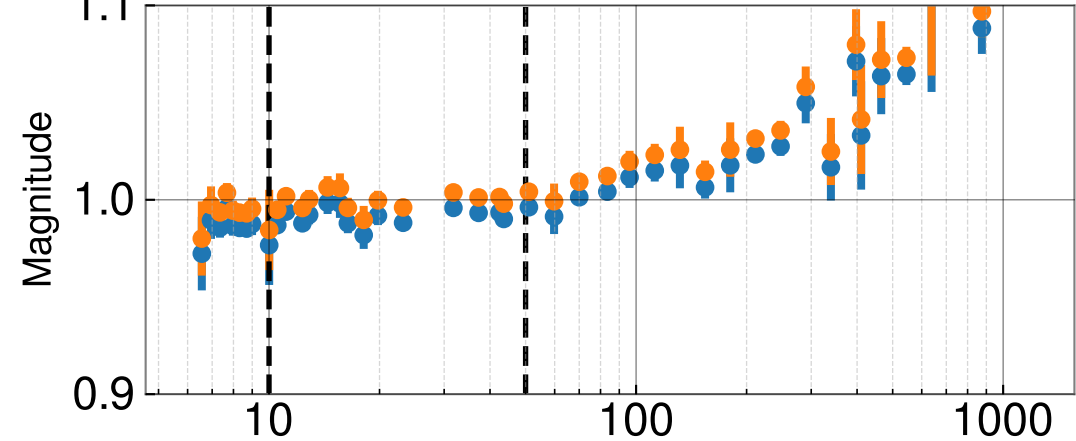
All fixed parameters drawn from 20230621T211522Z/pydarm\_H1.ini



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



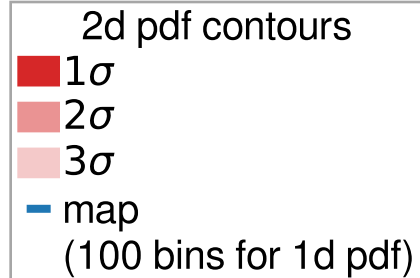
Actuation strength residuals  
(measurement/model w. free params)



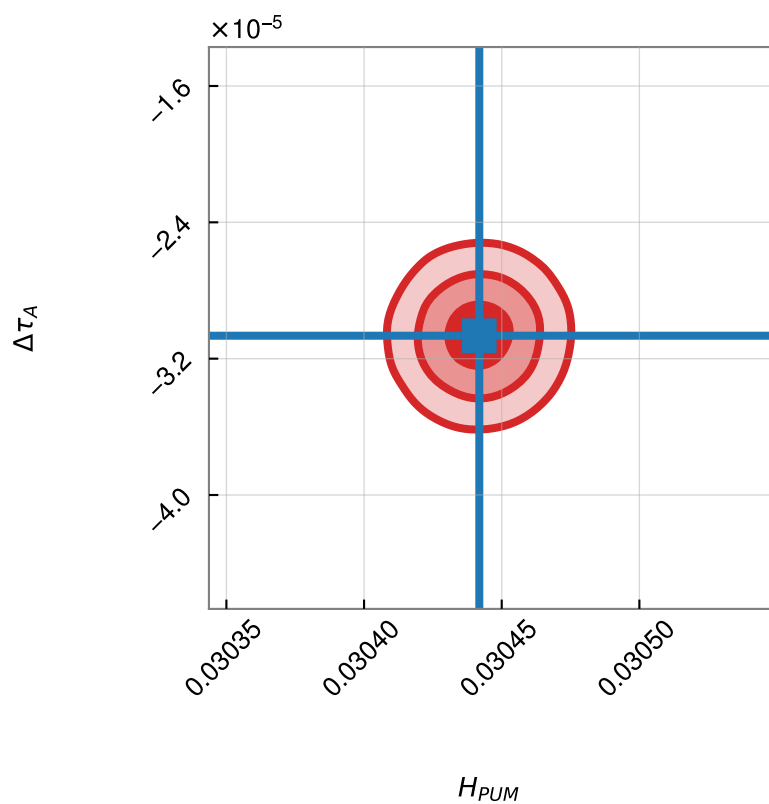
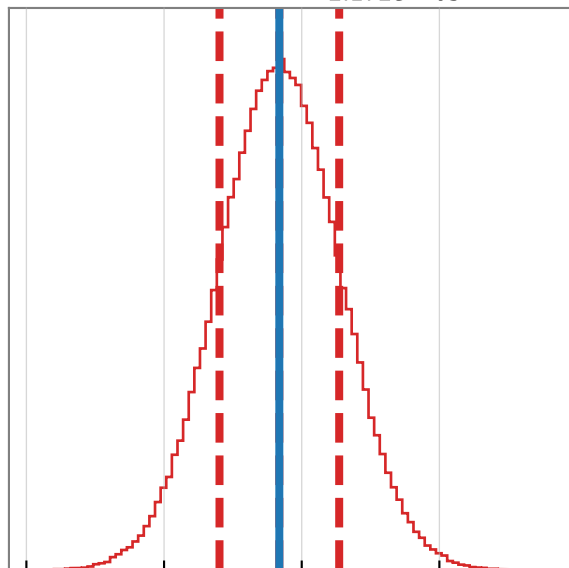
Parameter	(value +/-)   value	+	-
Actuation Gain, Hap (N/A)	0.03044	2.175e-05 (0.07%)	2.172e-05 (0.07%)
Residual time delay, tau_A (s)	-3.065e-05	3.562e-06 (-11.62%)	3.586e-06 (-11.70%)



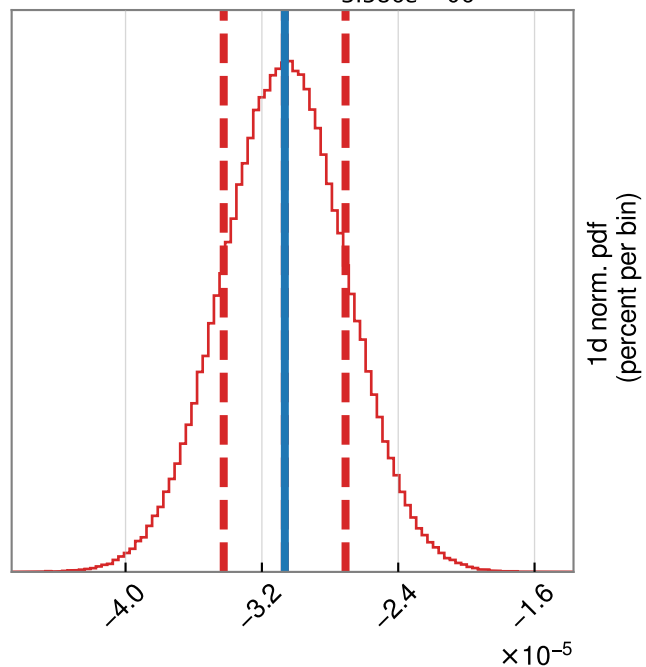
# 20230517T161131Z EX L2 actuation MCMC corner plot



$$H_{PUM} = 3.044e - 02^{+2.175e - 05}_{-2.172e - 05}$$



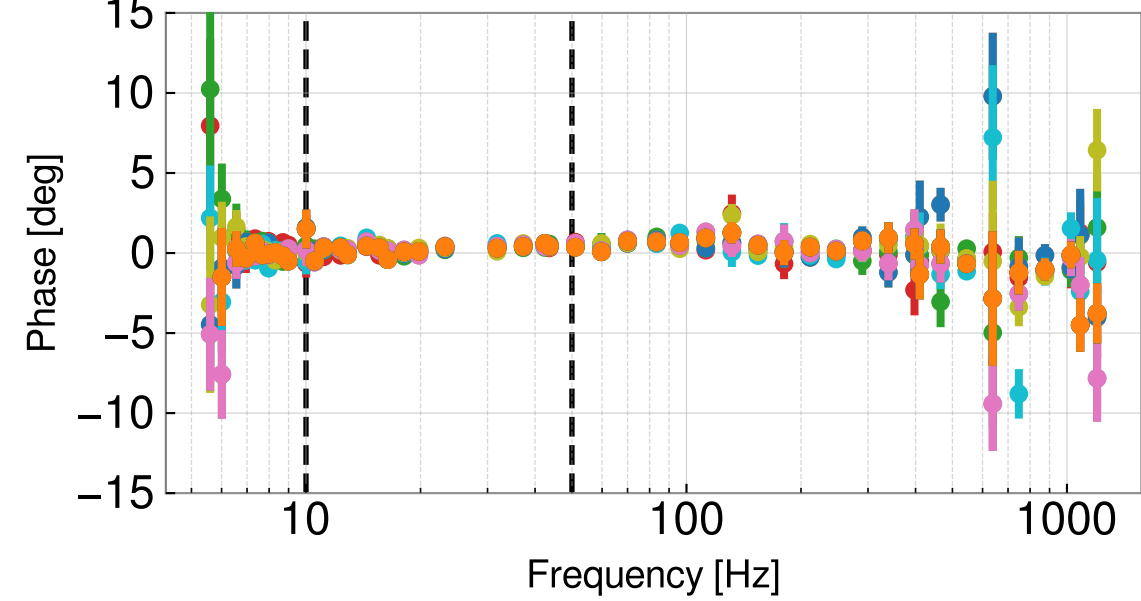
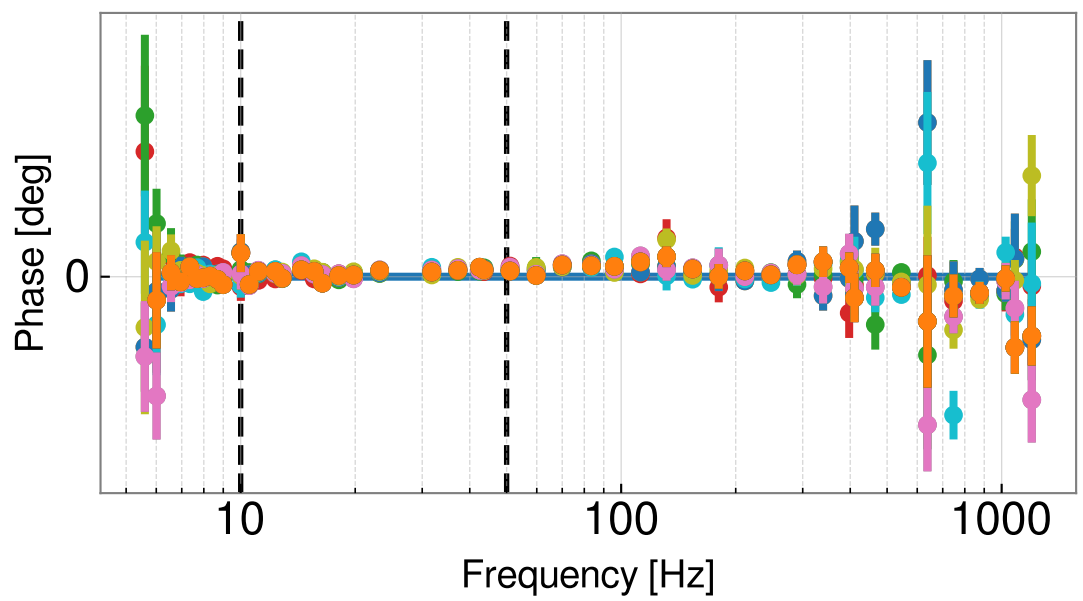
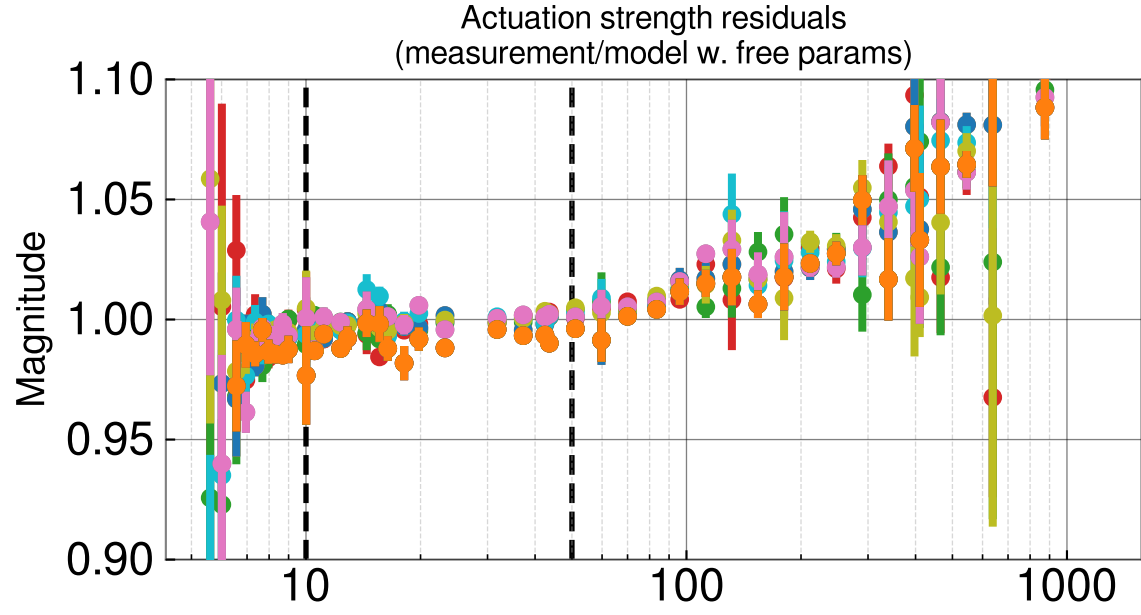
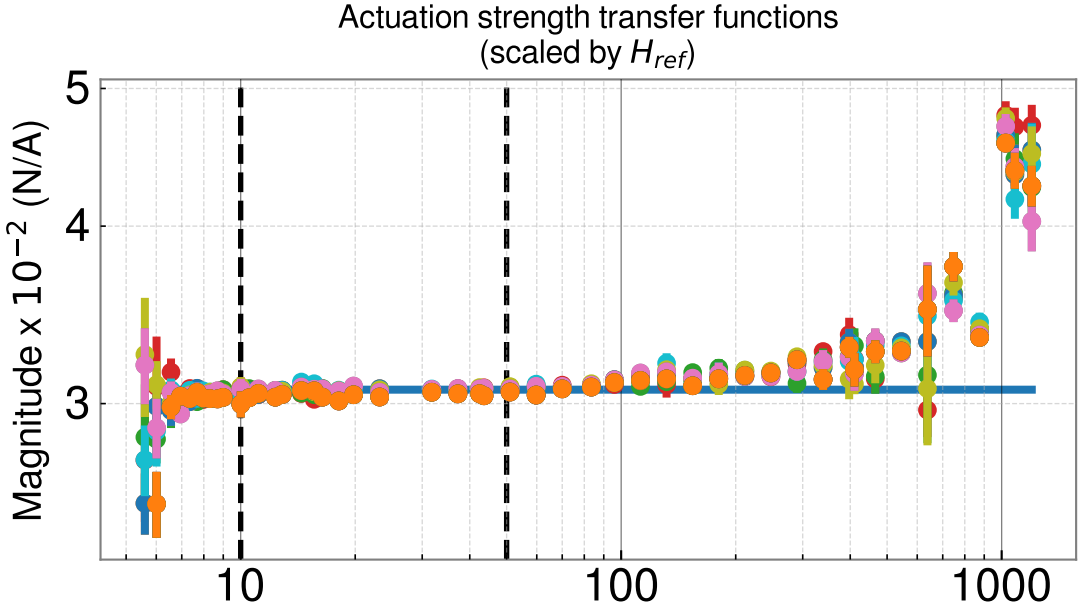
$$\Delta\tau_A = -3.065e - 05^{+3.562e - 06}_{-3.586e - 06}$$



# H1 SUSEX L2 actuation model history

All fixed parameters from 20230621T211522Z/pydarm\_H1.ini

- 20230510T062635Z model
- 20230517T161131Z measurement
- 20230509T064300Z measurement
- 20230505T172117Z measurement
- 20230517T161131Z measurement
- 20230509T064300Z measurement
- 20230505T172117Z measurement
- 20230517T161131Z measurement
- 20230508T173520Z measurement
- 20230505T010115Z measurement
- 20230504T052558Z measurement
- MCMC Fit Range: 10 Hz to 50 Hz

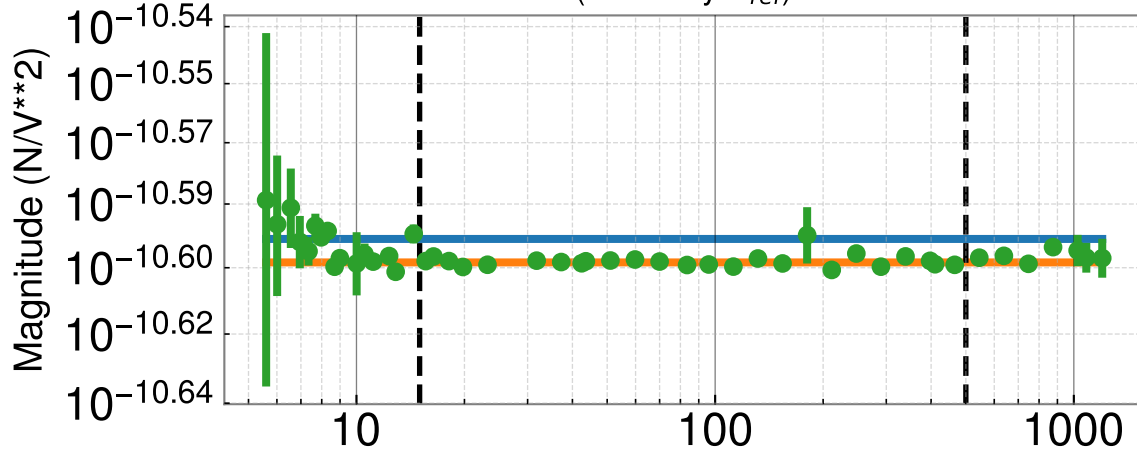


# H1SUSEX L3 actuation model MCMC summary

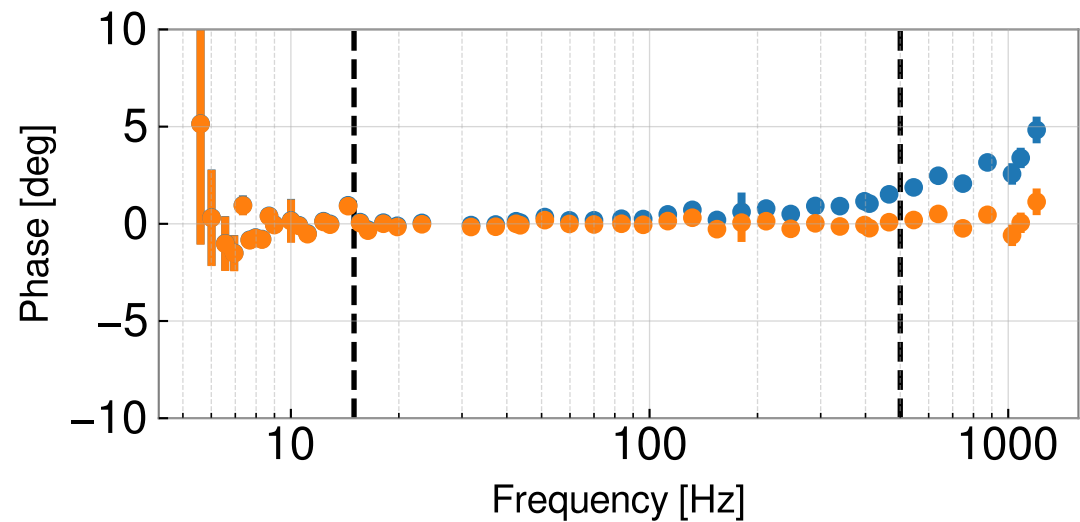
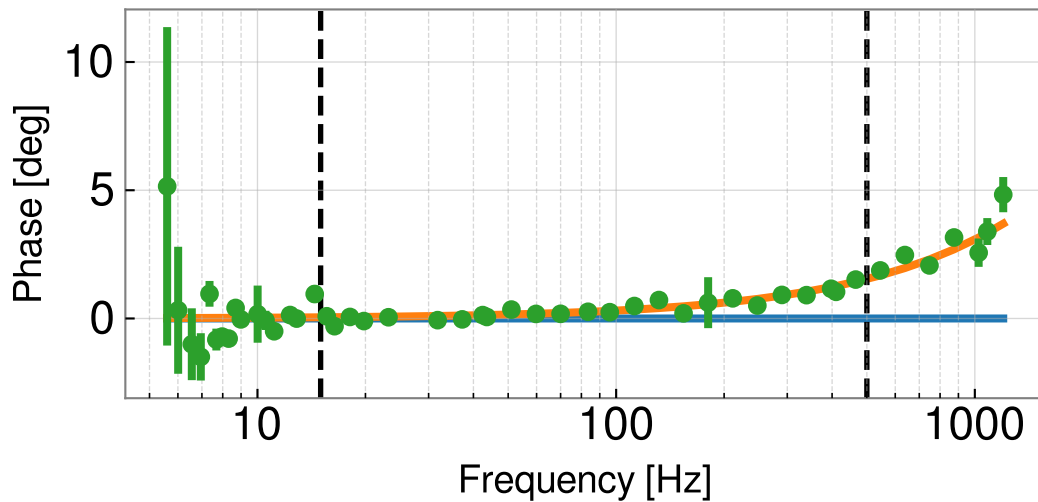
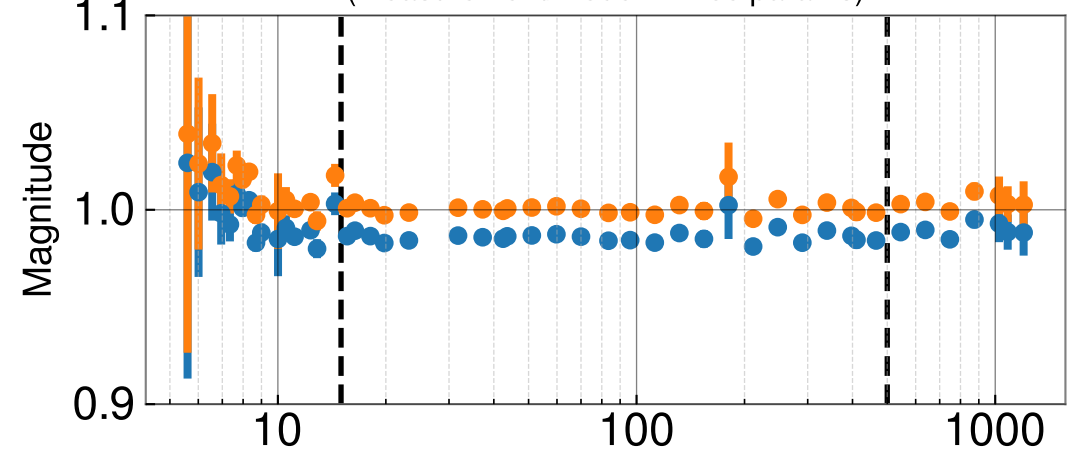
All fixed parameters drawn from 20230621T211522Z/pydarm\_H1.ini



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

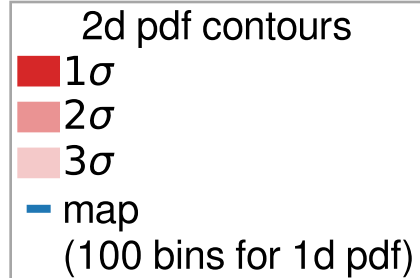


Actuation strength residuals  
(measurement/model w. free params)

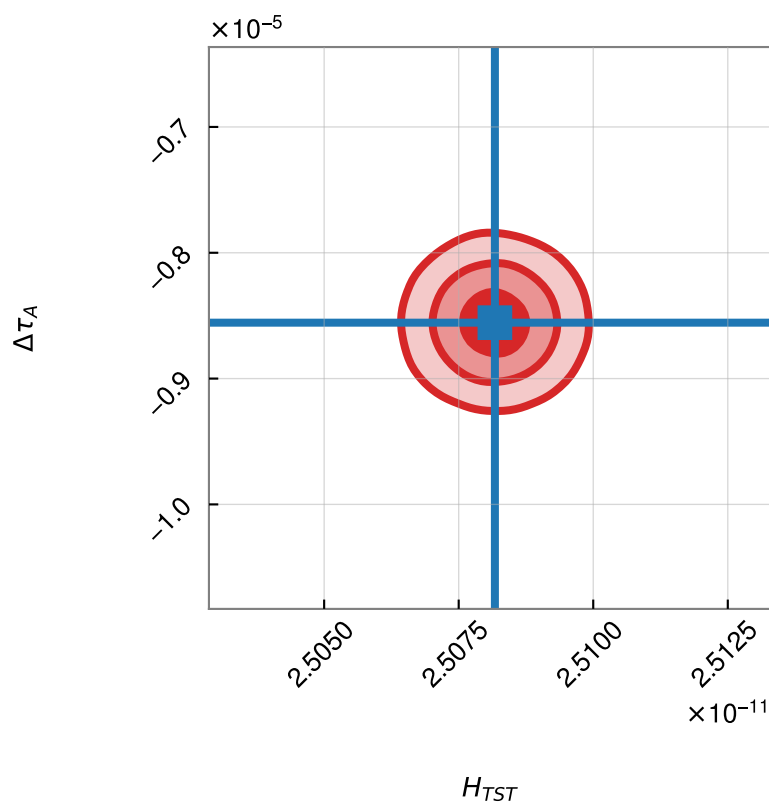
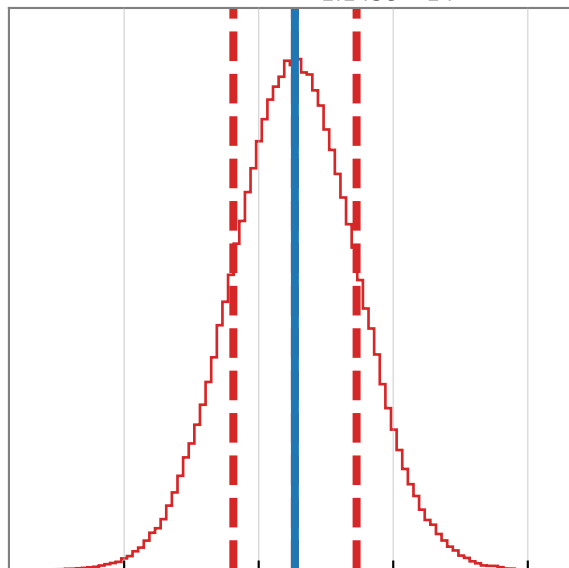


Parameter	(value +/-)   value	+	-
Actuation Gain, Hat (N/V**2)	2.508e-11	1.146e-14 (0.05%)	1.143e-14 (0.05%)
Residual time delay, tau_A (s)	-8.556e-06	4.615e-07 (-5.39%)	4.596e-07 (-5.37%)

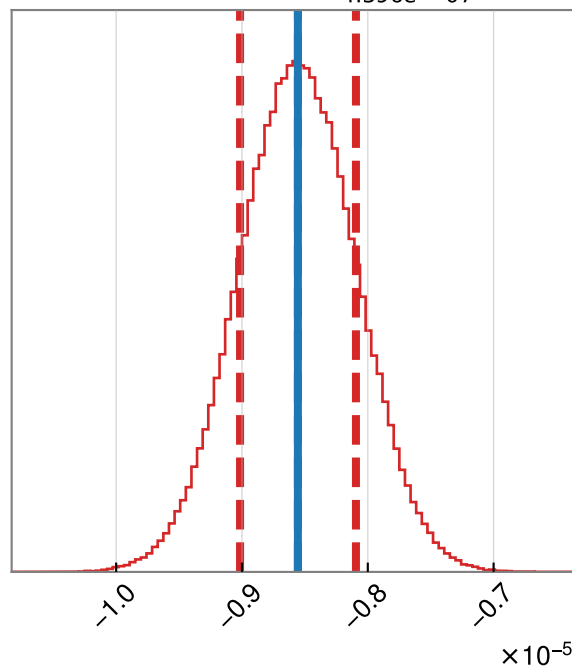
# 20230517T163635Z EX L3 actuation MCMC corner plot



$$H_{TST} = 2.508e - 11^{+1.146e - 14}_{-1.143e - 14}$$



$$\Delta\tau_A = -8.556e - 06^{+4.615e - 07}_{-4.596e - 07}$$

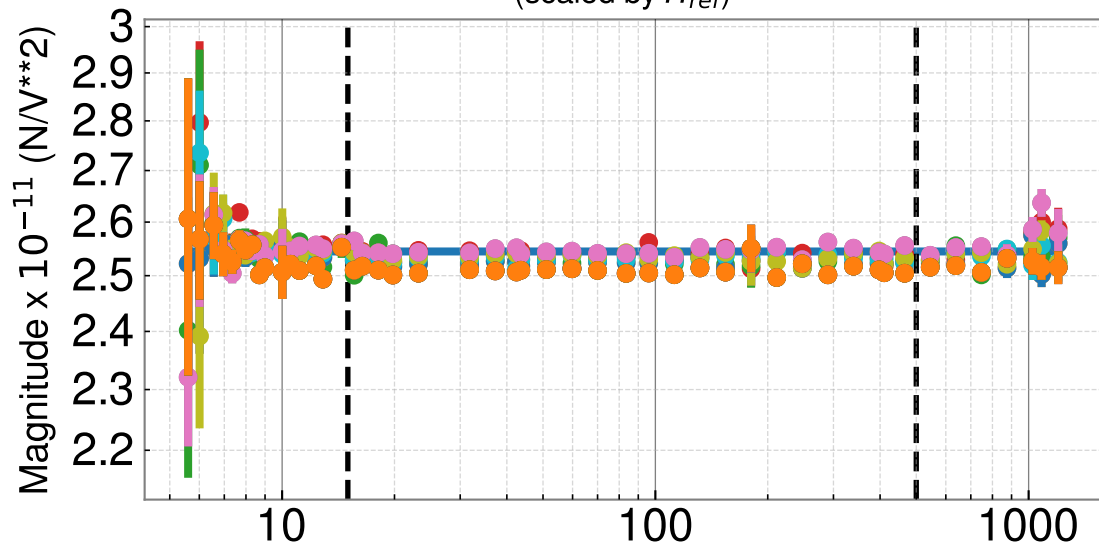


# H1 SUSEX L3 actuation model history

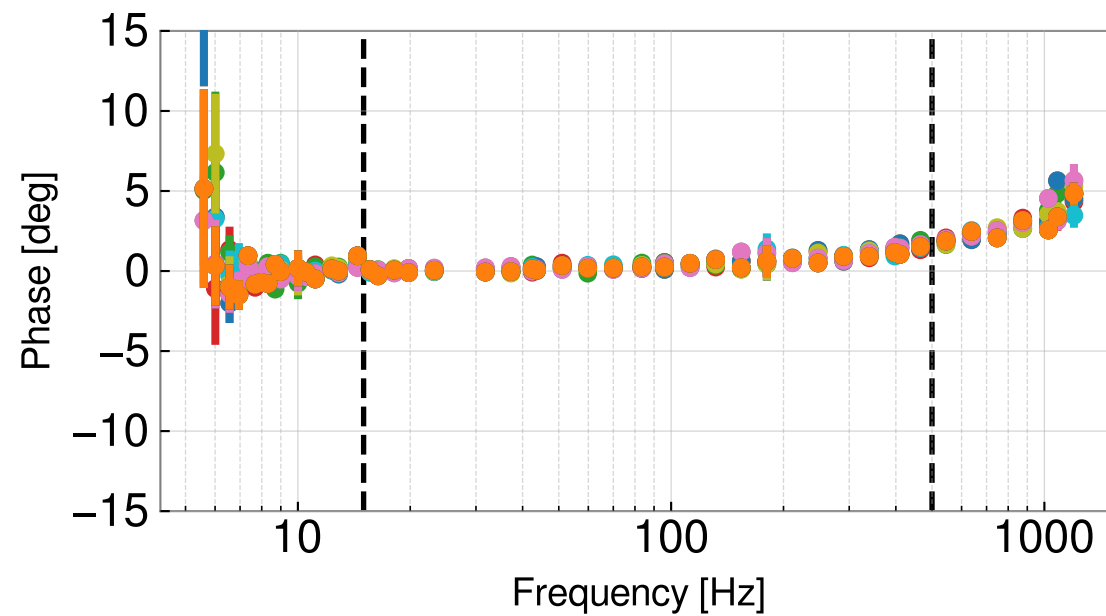
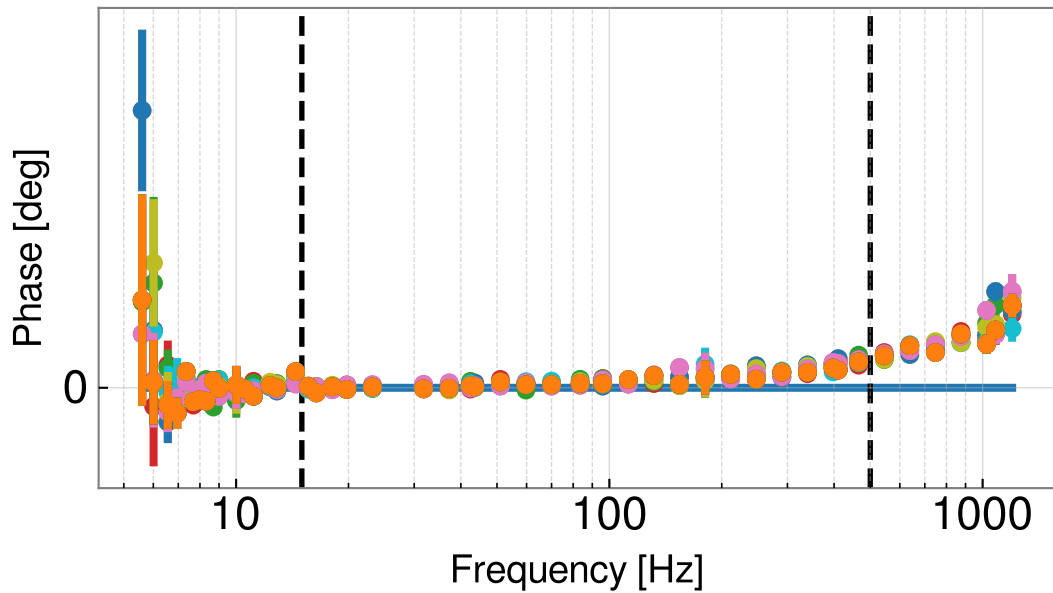
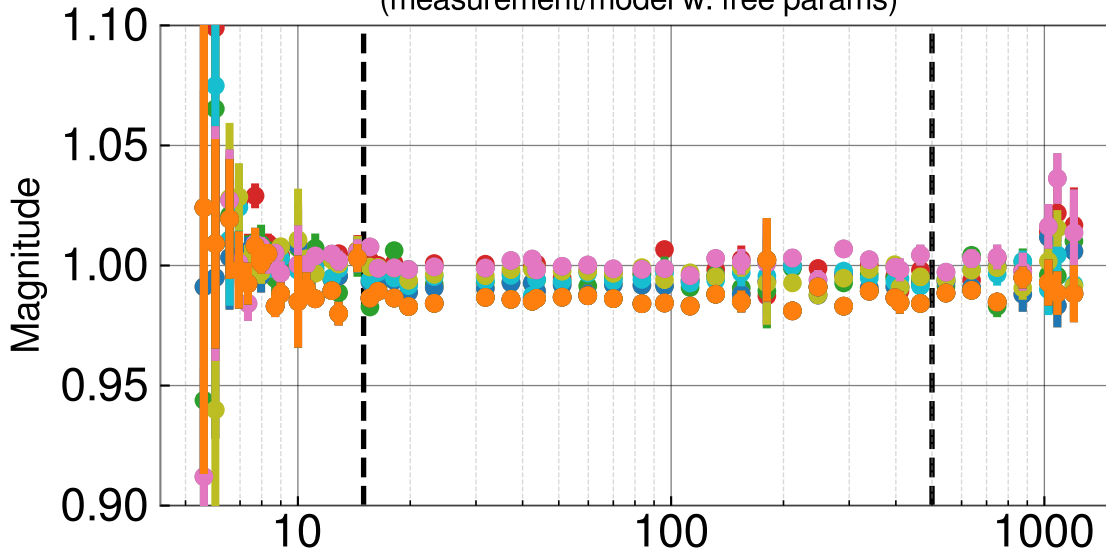
All fixed parameters from 20230504T055102Z/pydarm\_H1.ini

- 20230510T062635Z model
- 20230517T163635Z measurement
- 20230517T163635Z measurement
- 20230517T163635Z measurement
- 20230517T163635Z measurement
- 20230517T163635Z measurement
- 20230509T070804Z measurement
- 20230509T070804Z measurement
- 20230508T180024Z measurement
- 20230506T182213Z measurement
- 20230505T174621Z measurement
- 20230505T174621Z measurement
- 20230505T012619Z measurement
- 20230504T055102Z measurement
- MCMC Fit Range: 15 Hz to 500 Hz

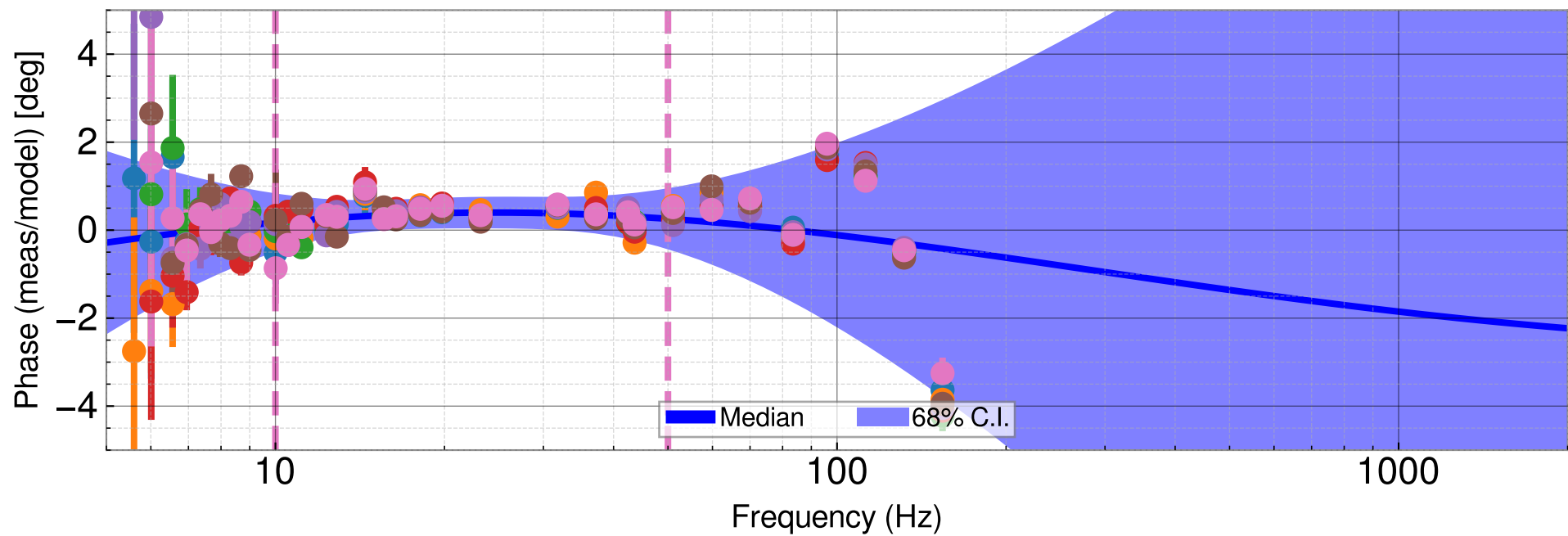
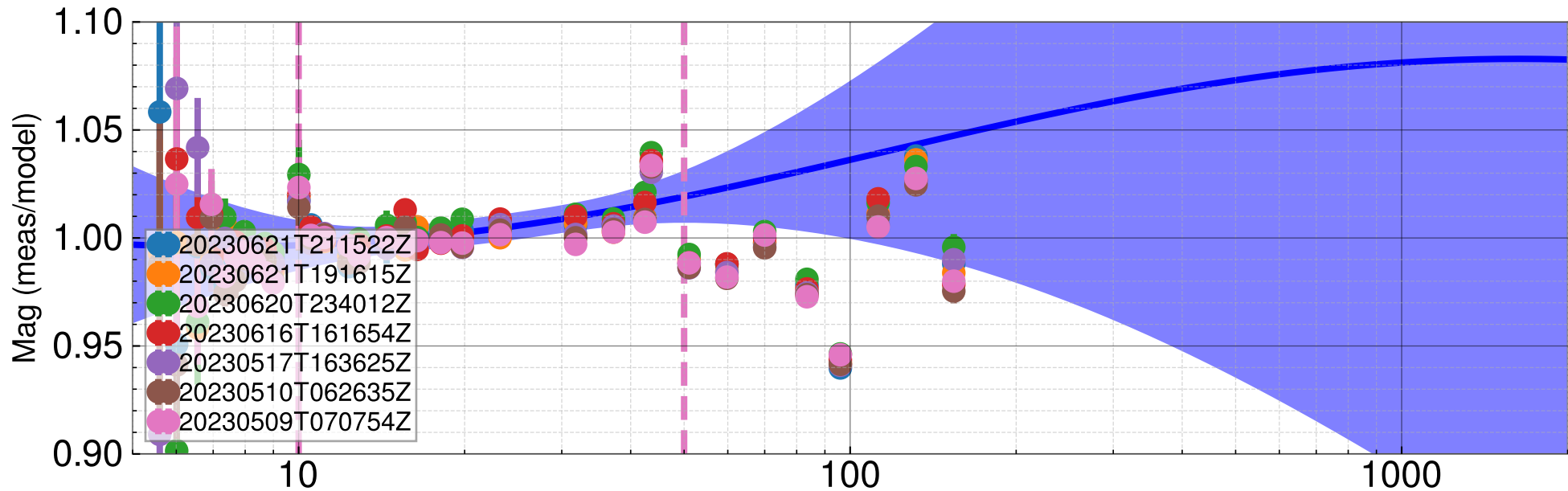
Actuation strength transfer functions  
(scaled by  $H_{ref}$ )



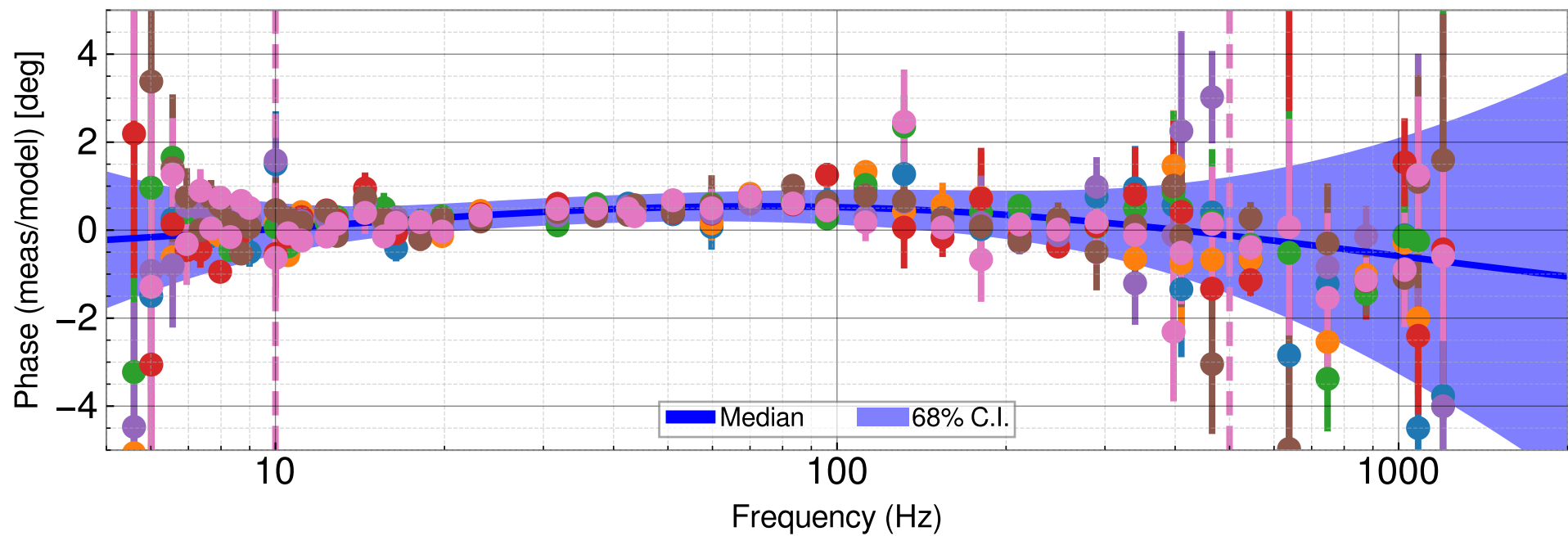
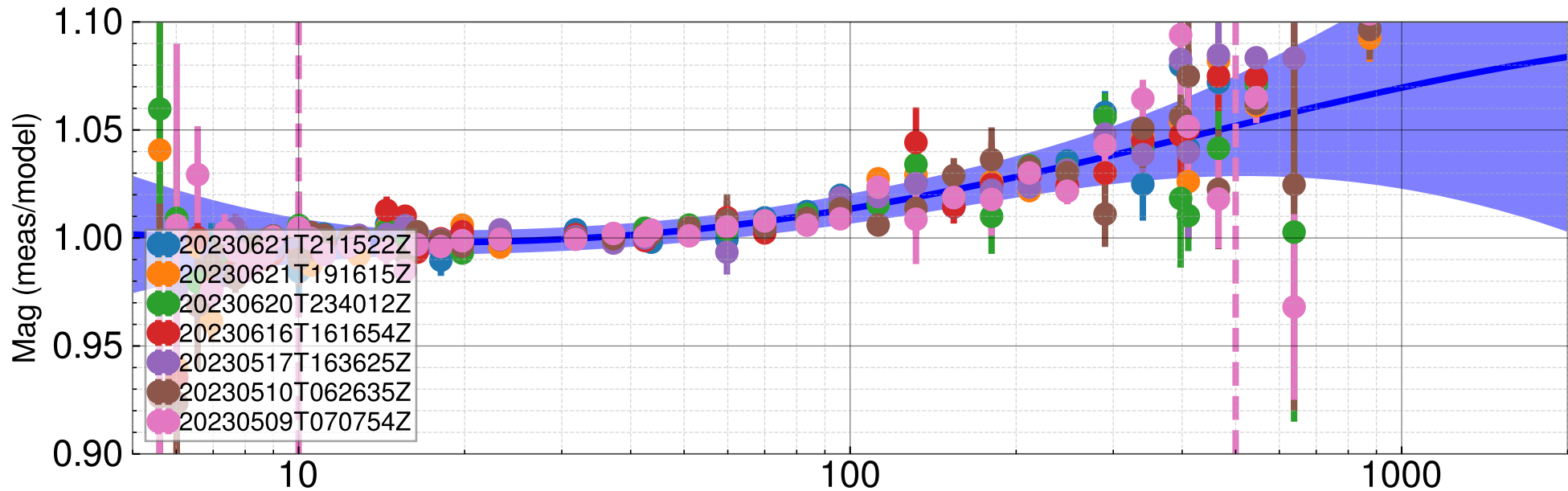
Actuation strength residuals  
(measurement/model w. free params)



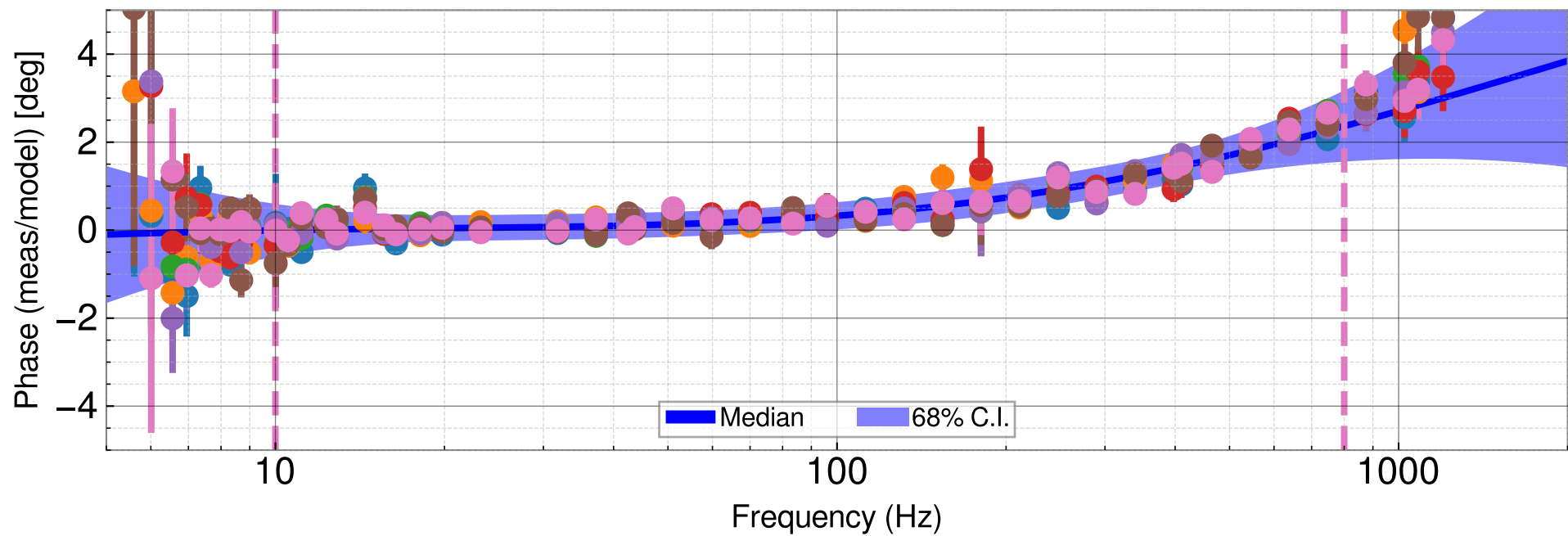
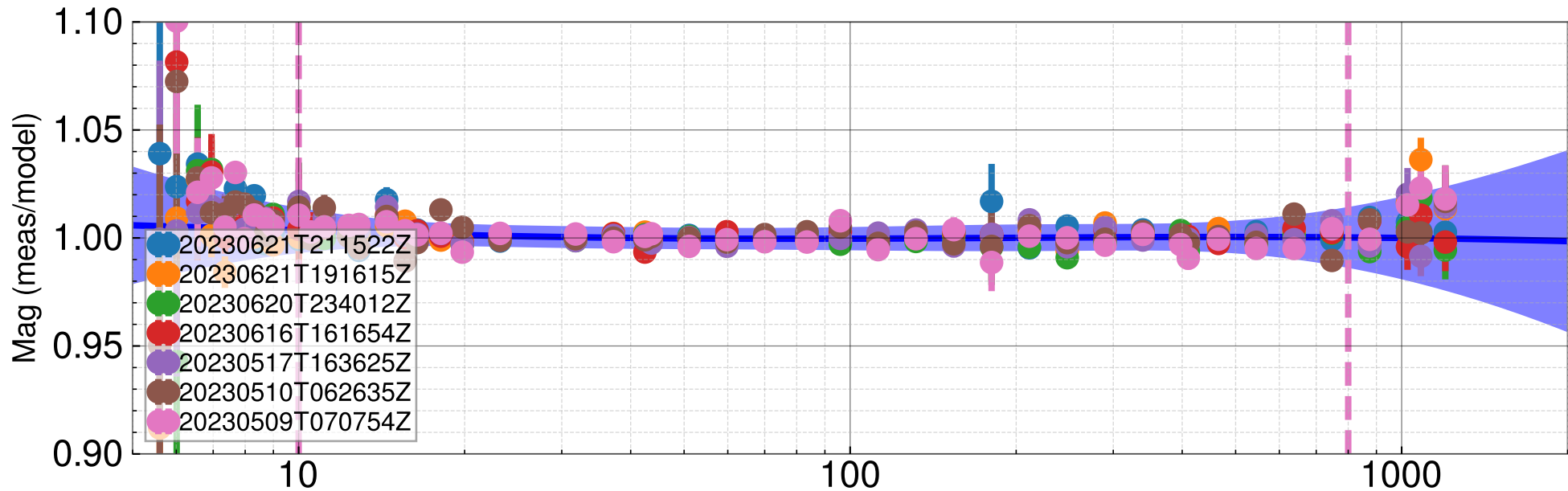
# Actuation/L1/EX GPR



# Actuation/L2/EX GPR

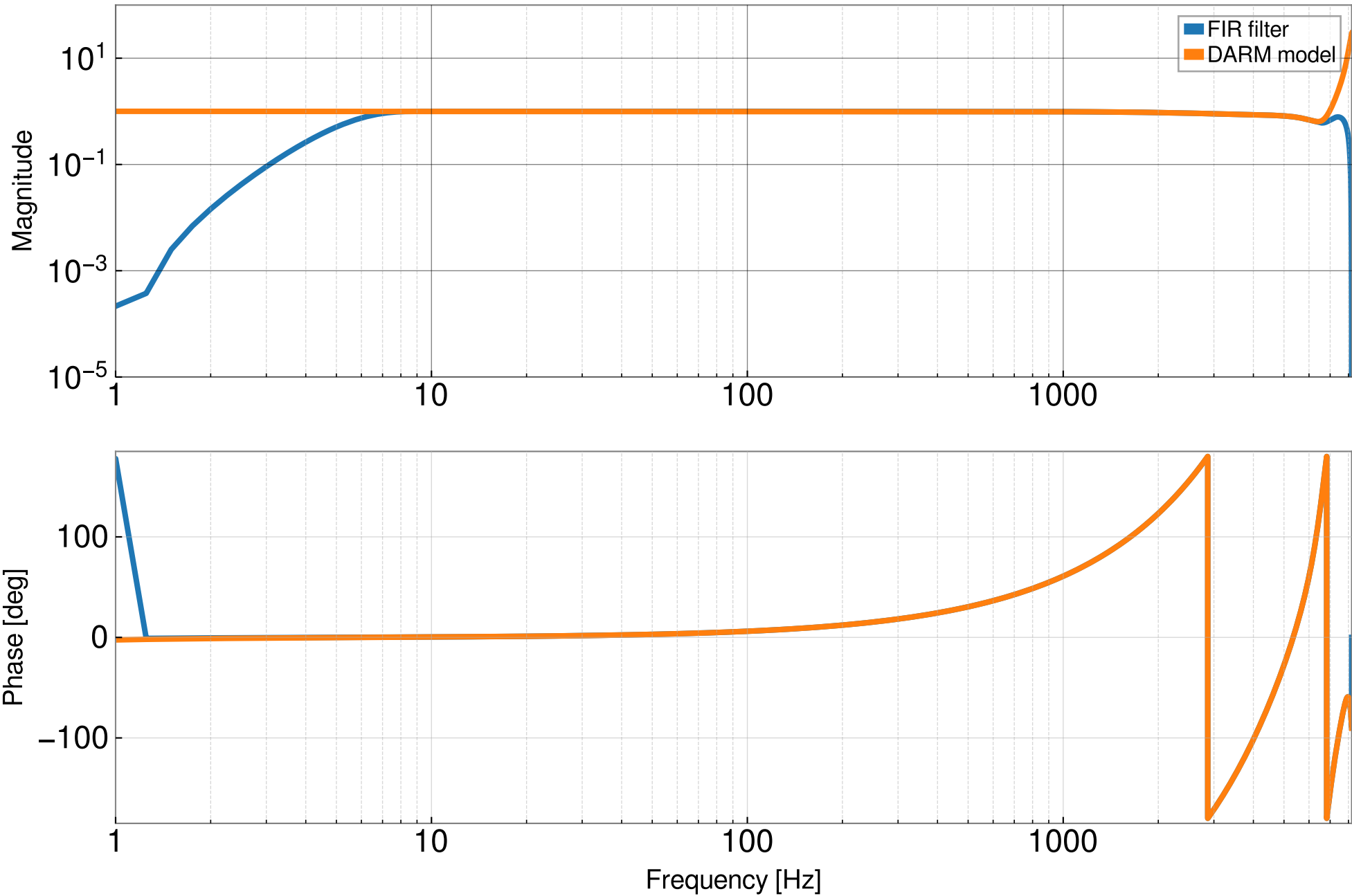


# Actuation/L3/EX GPR

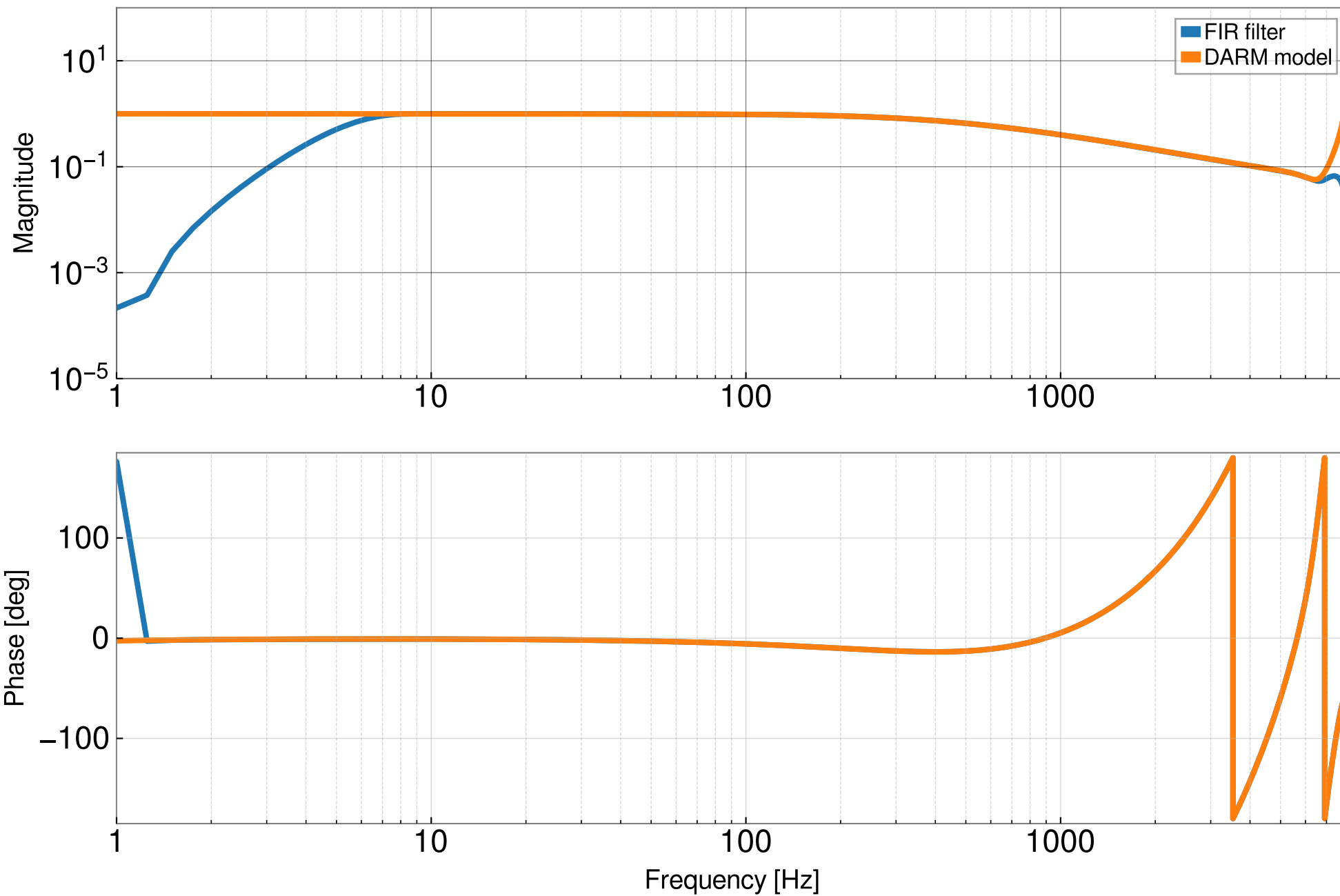




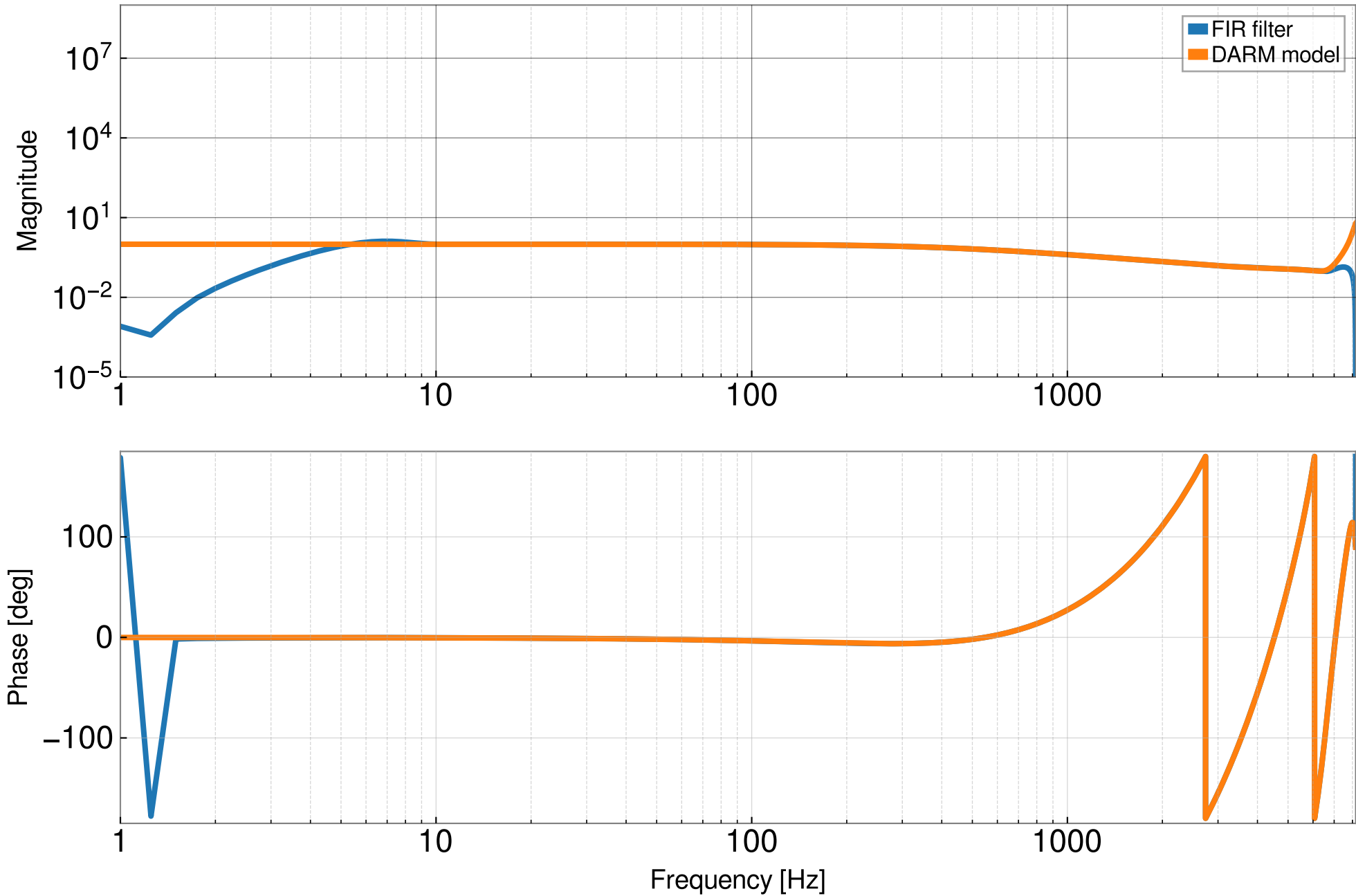
Residual corrections comparison (gstlal\\_compute\\_strain\\_C00\\_filters\\_H1)



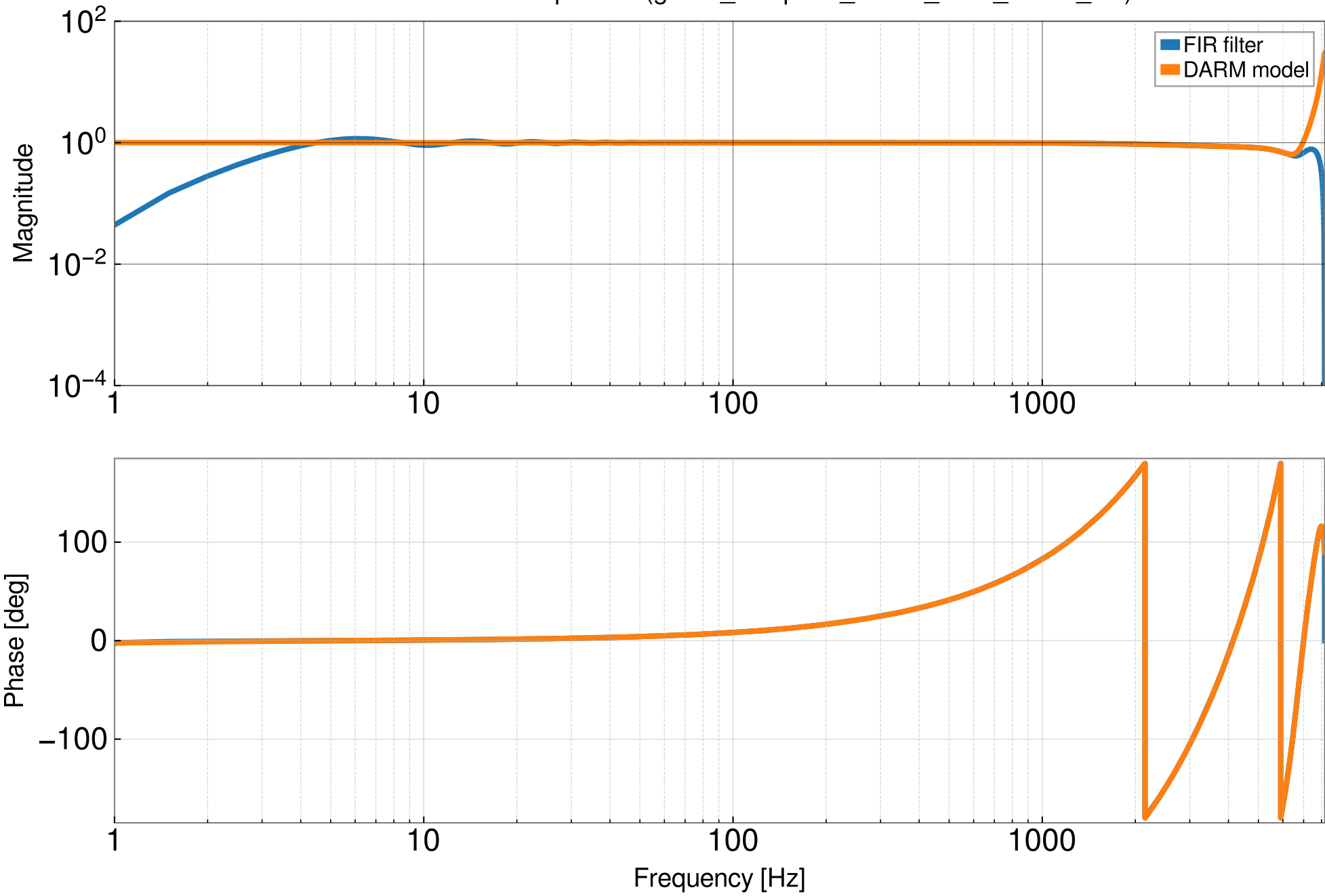
Res Corr No CC Pole comparison (gstlal\\_compute\\_strain\\_C00\\_filters\\_H1)



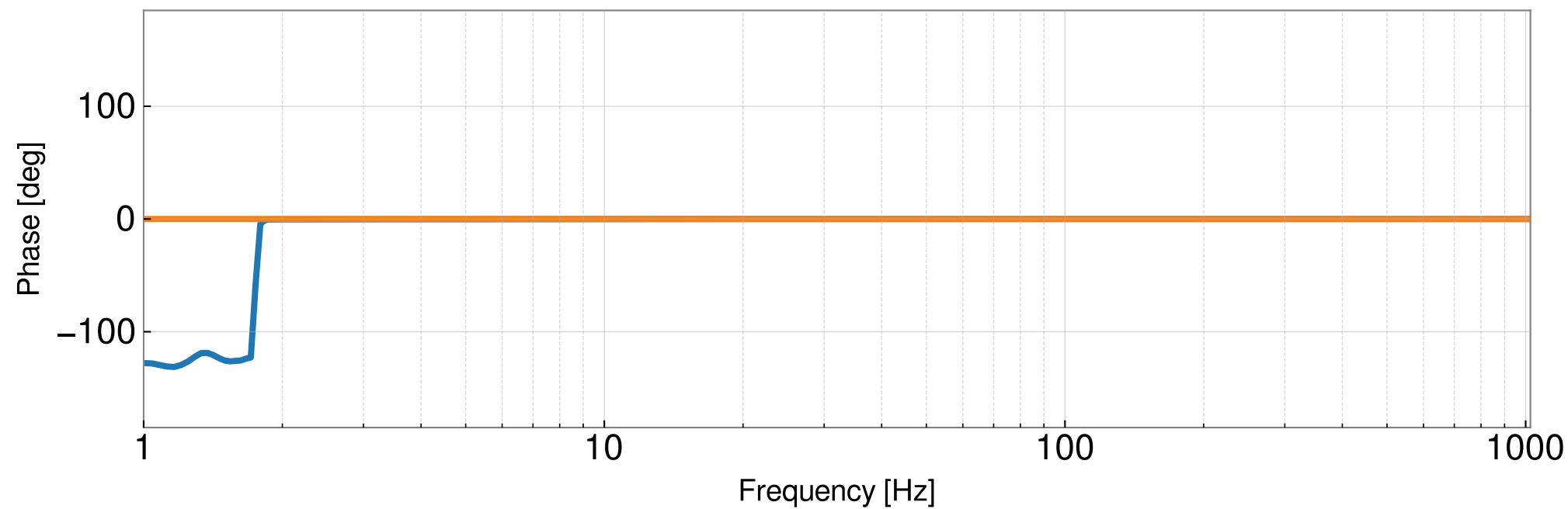
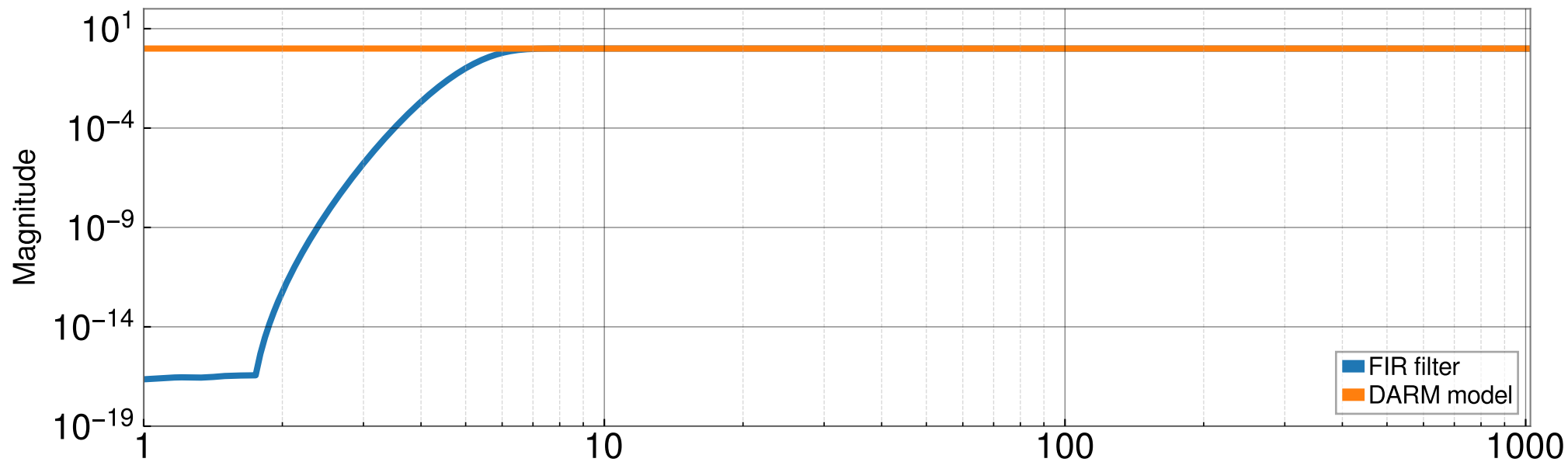
Res Corr No Pole comparison (gstlal\\_compute\\_strain\\_C00\\_filters\\_H1)



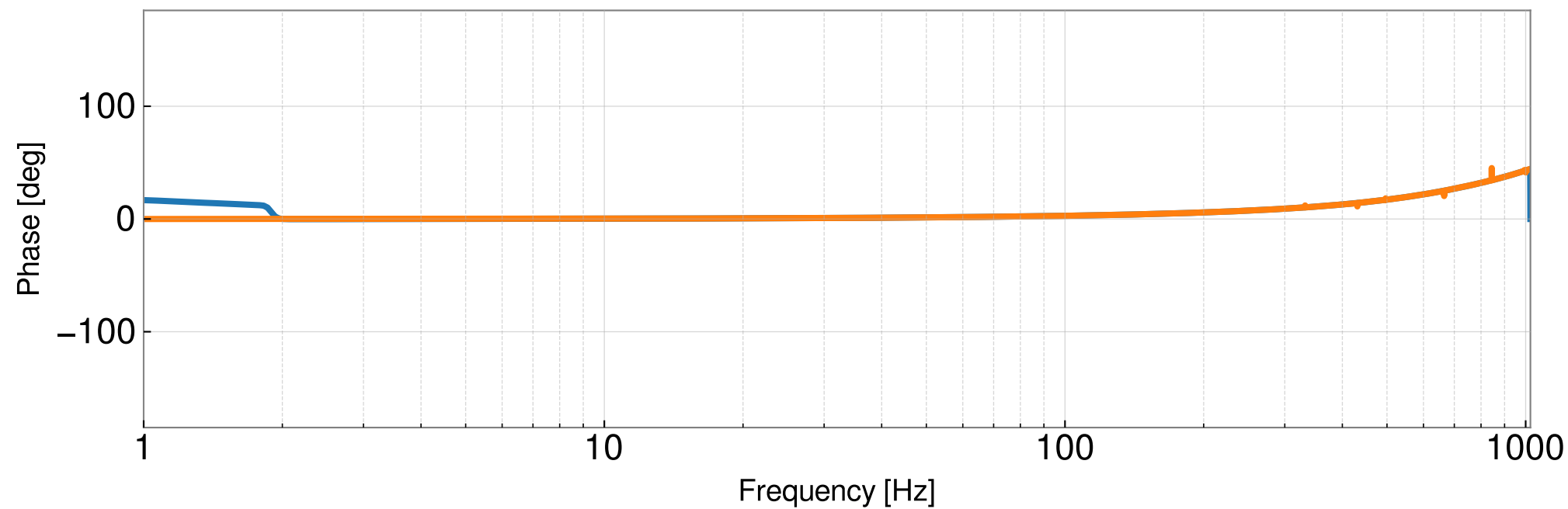
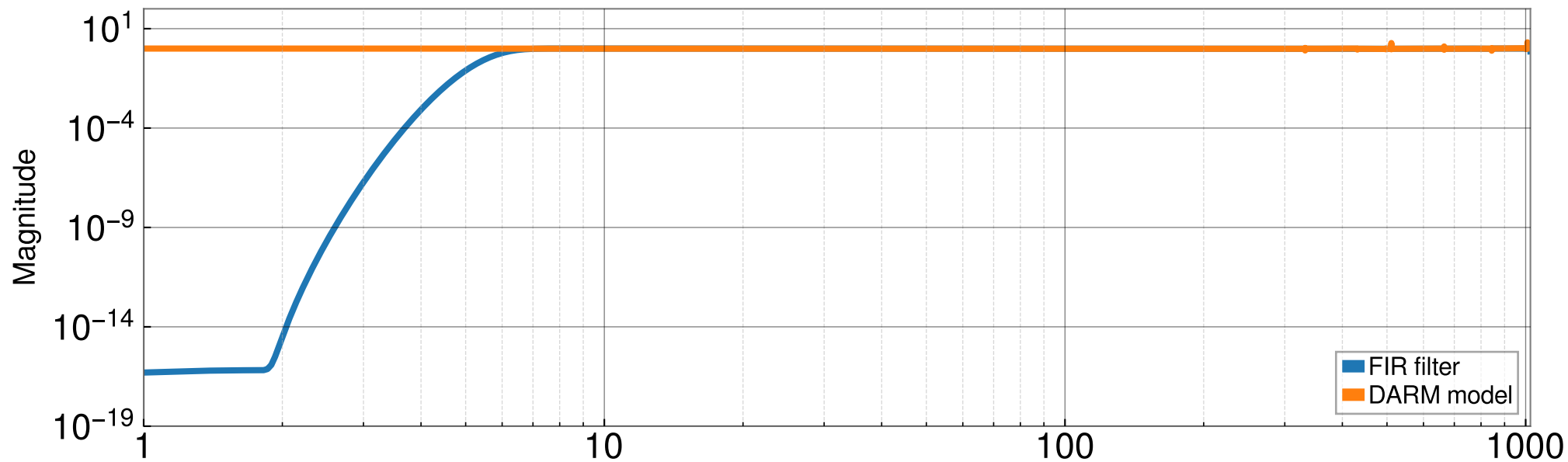
Nonsens corrections comparison (gstlal\\_compute\\_strain\\_C00\\_filters\\_H1)



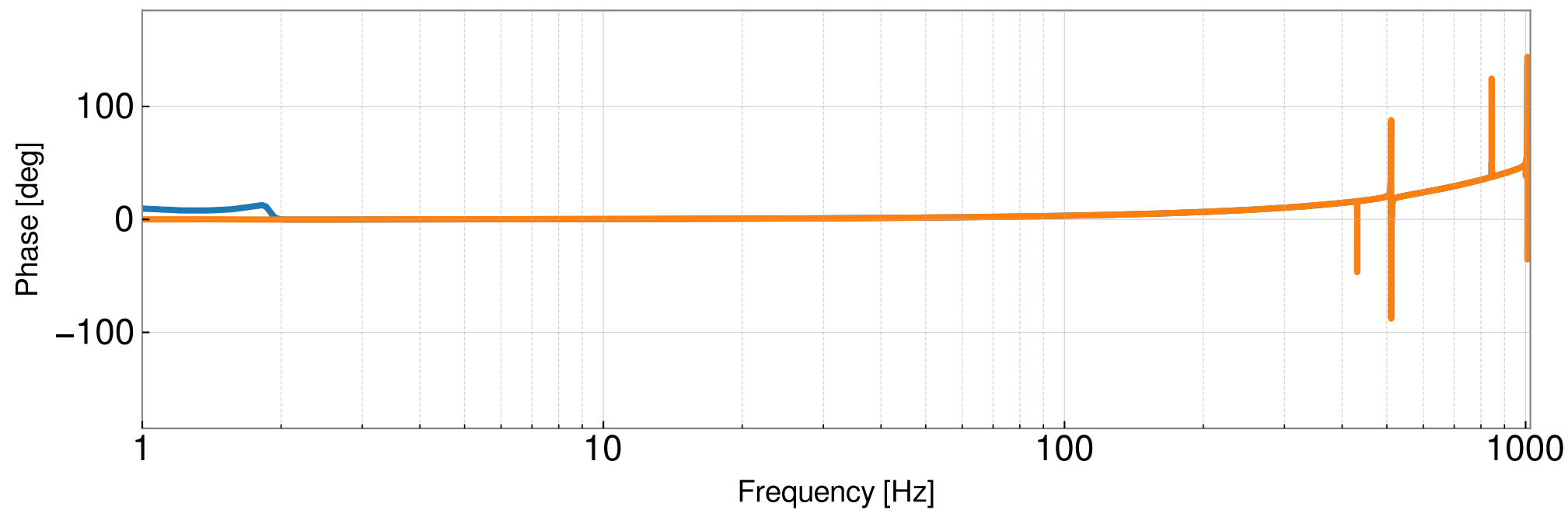
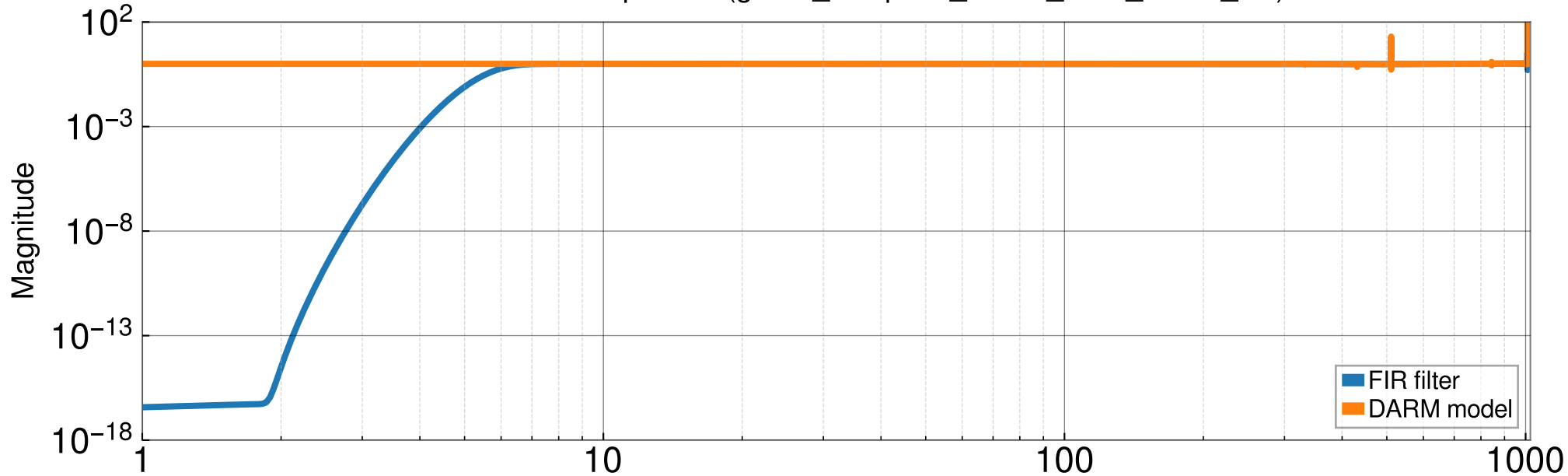
Residual corrections highpass comparison (gstlal\\_compute\\_strain\\_C00\\_filters\\_H1)



TST corrections comparison (gstlal\\_compute\\_strain\\_C00\\_filters\\_H1)



PUM corrections comparison (gstlal\\_compute\\_strain\\_C00\\_filters\\_H1)



UIM corrections comparison (gstlal\\_compute\\_strain\\_C00\\_filters\\_H1)

