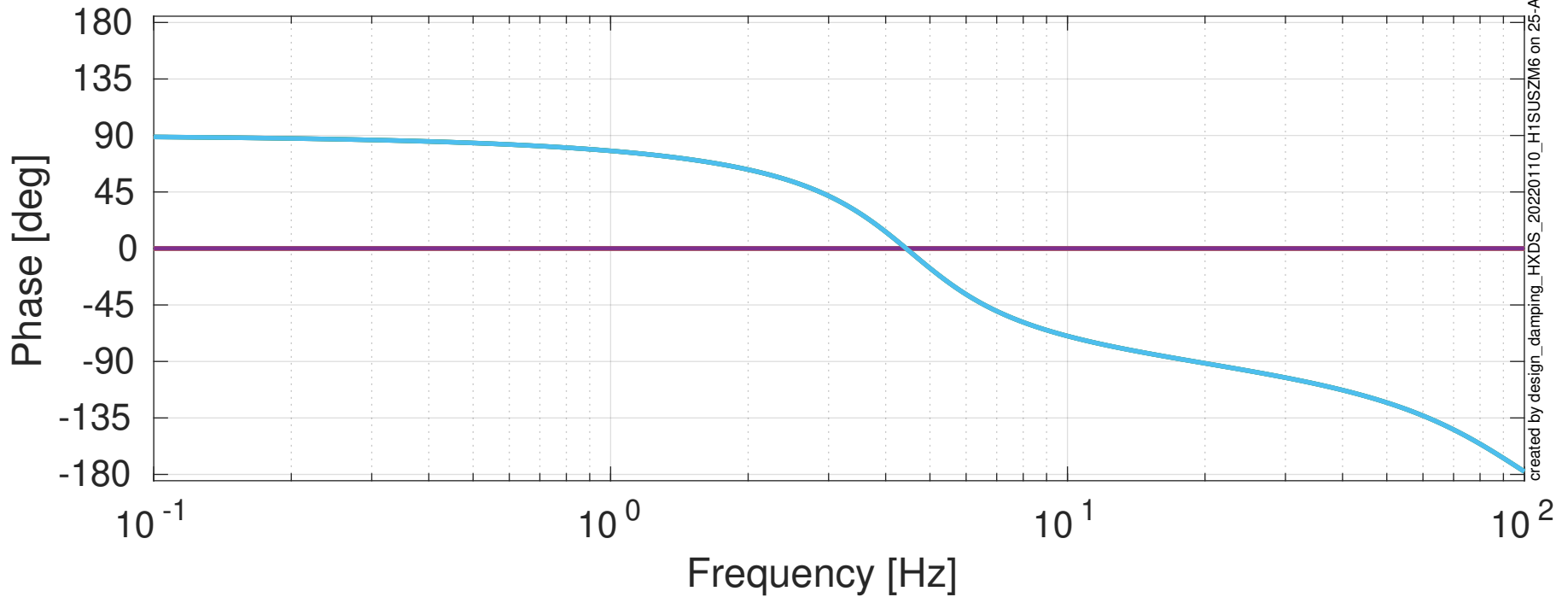
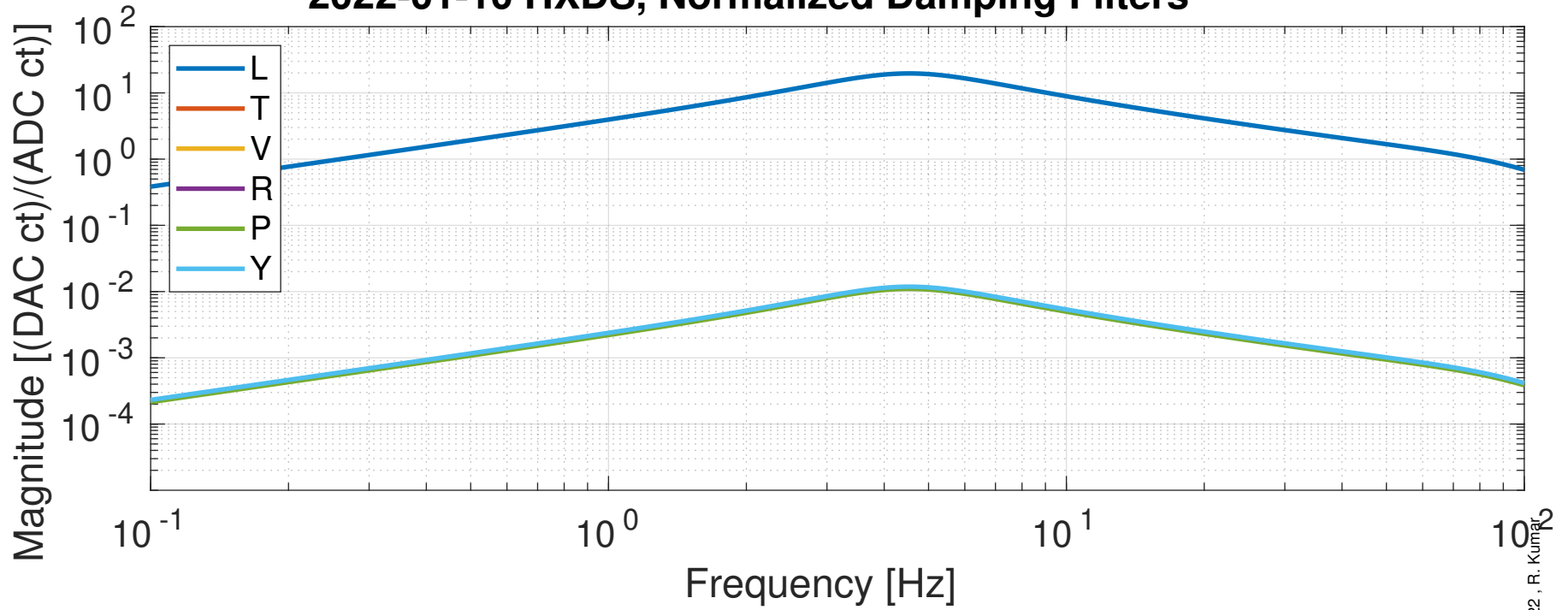
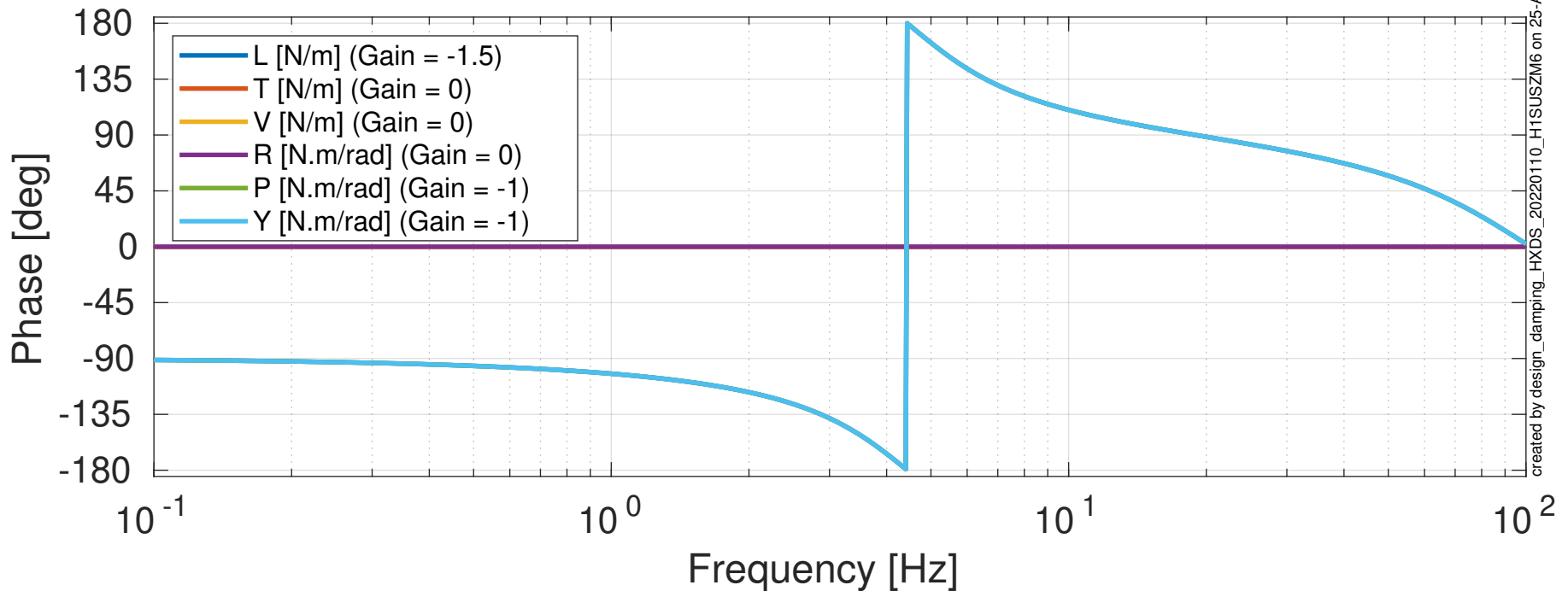
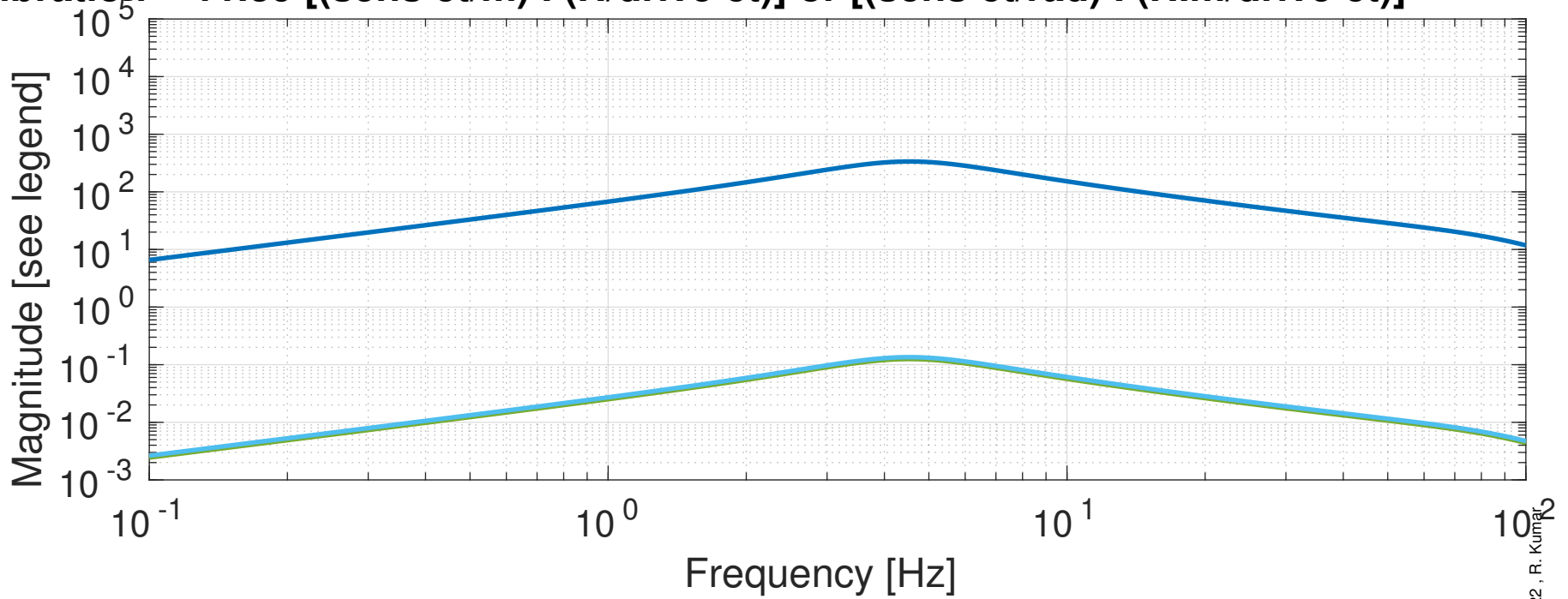


2022-01-10 HXDS, Normalized Damping Filters

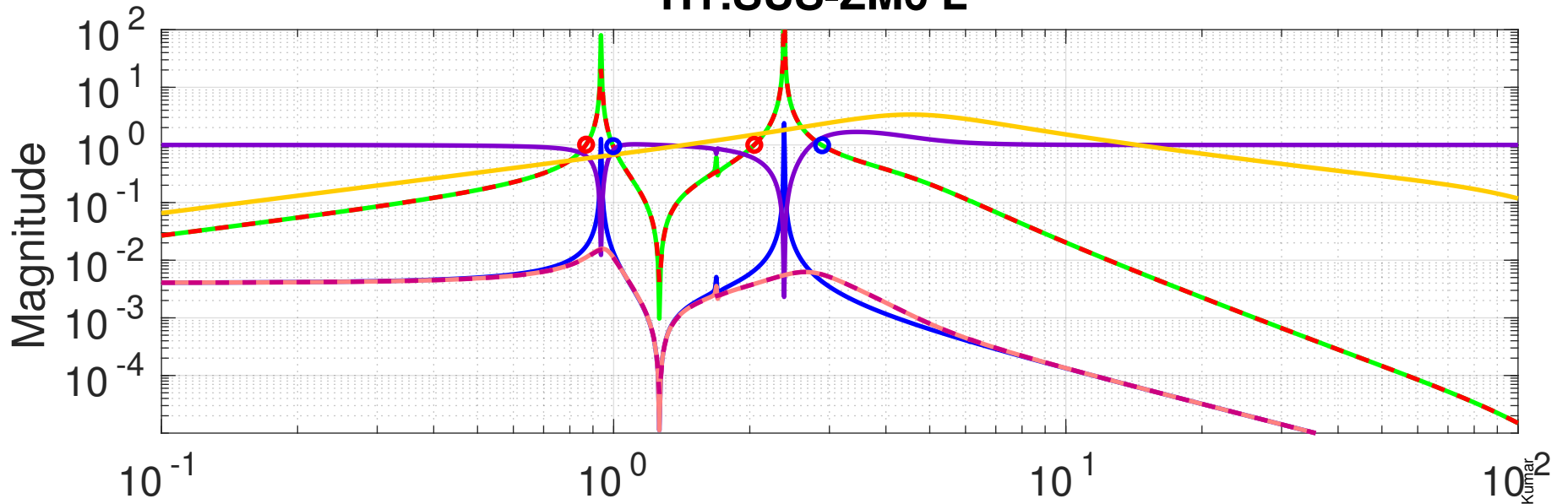


2022-01-10 HXDS, Calibrated Damping Filters

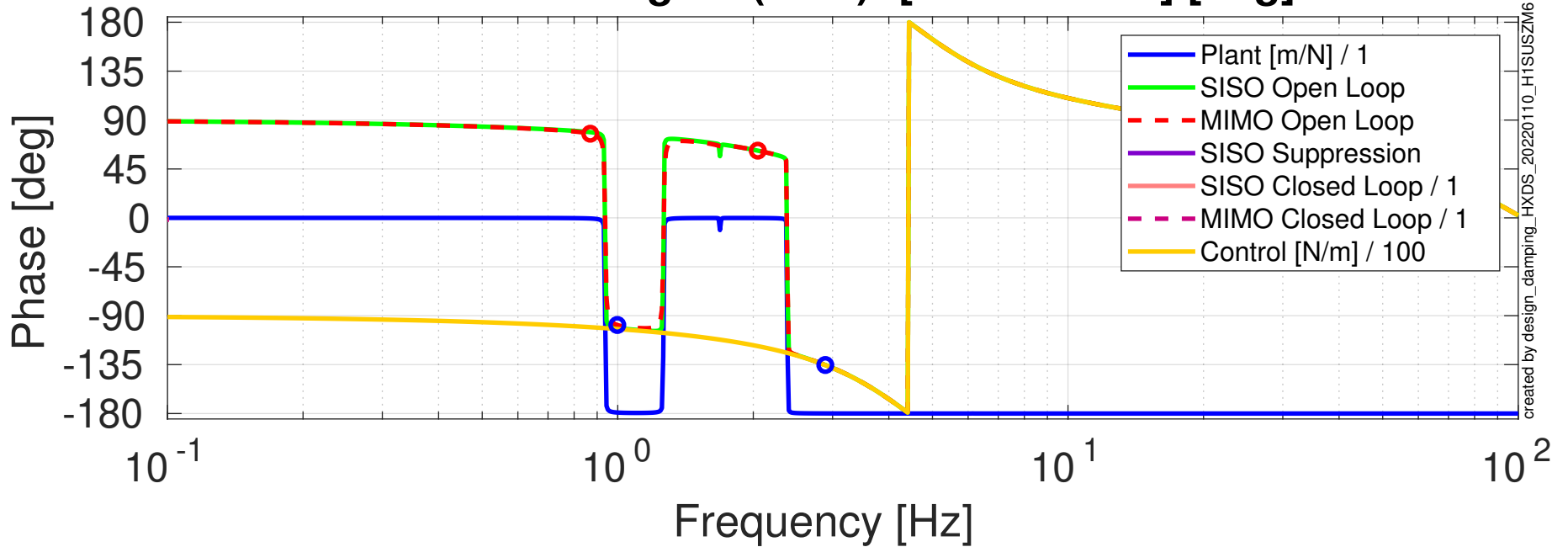
Calibration = 11.39 [(sens ct/m) . (N/drive ct)] or [(sens ct/rad) . (N.m/drive ct)]



Damping Loop Design H1:SUS-ZM6 L

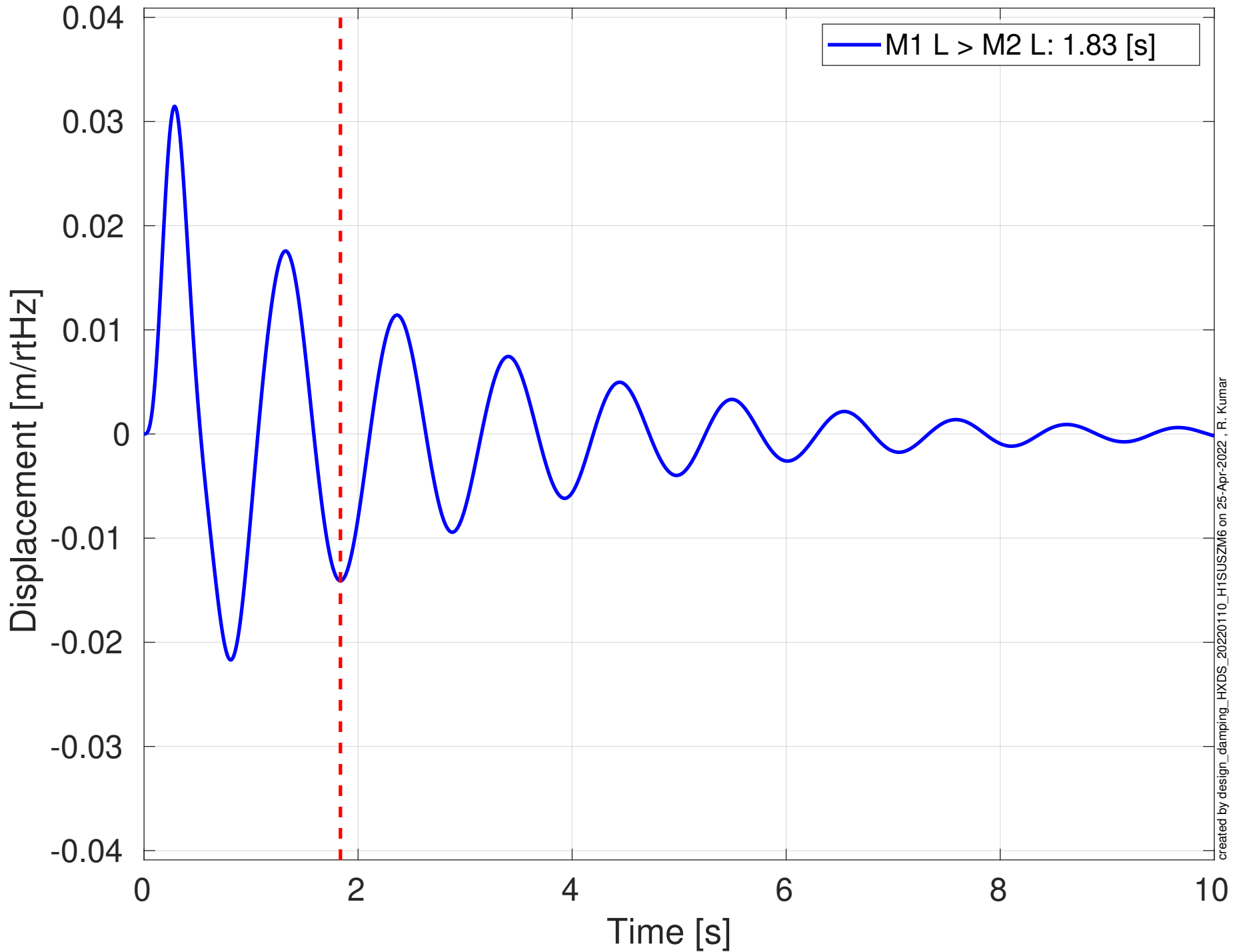


MIMO LUGF Phase Margins (red): [103 118] [deg]
MIMO UUGF Phase Margins (blue): [81.5 44.6] [deg]

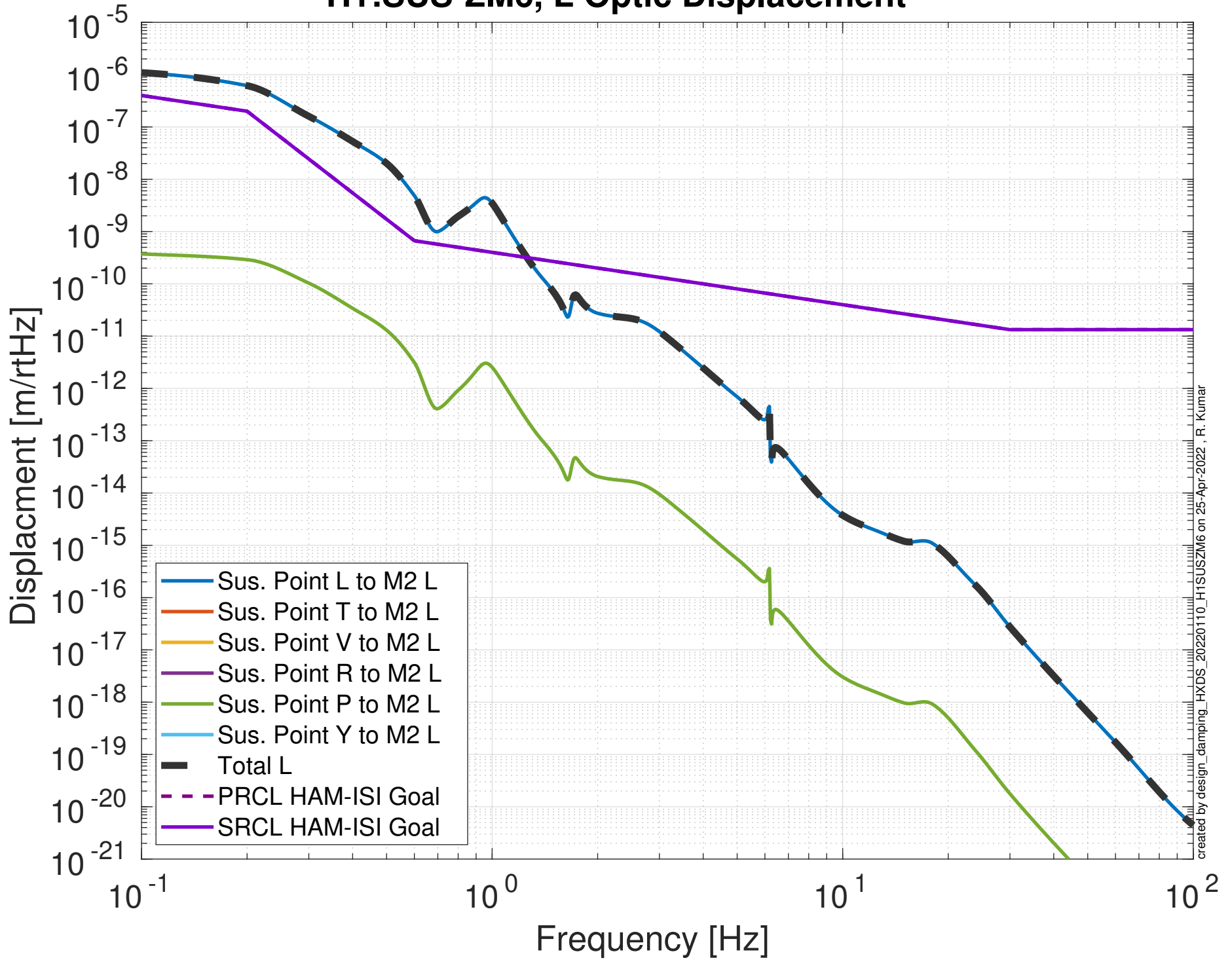


Damped Impulse Response

H1:SUS-ZM6 L

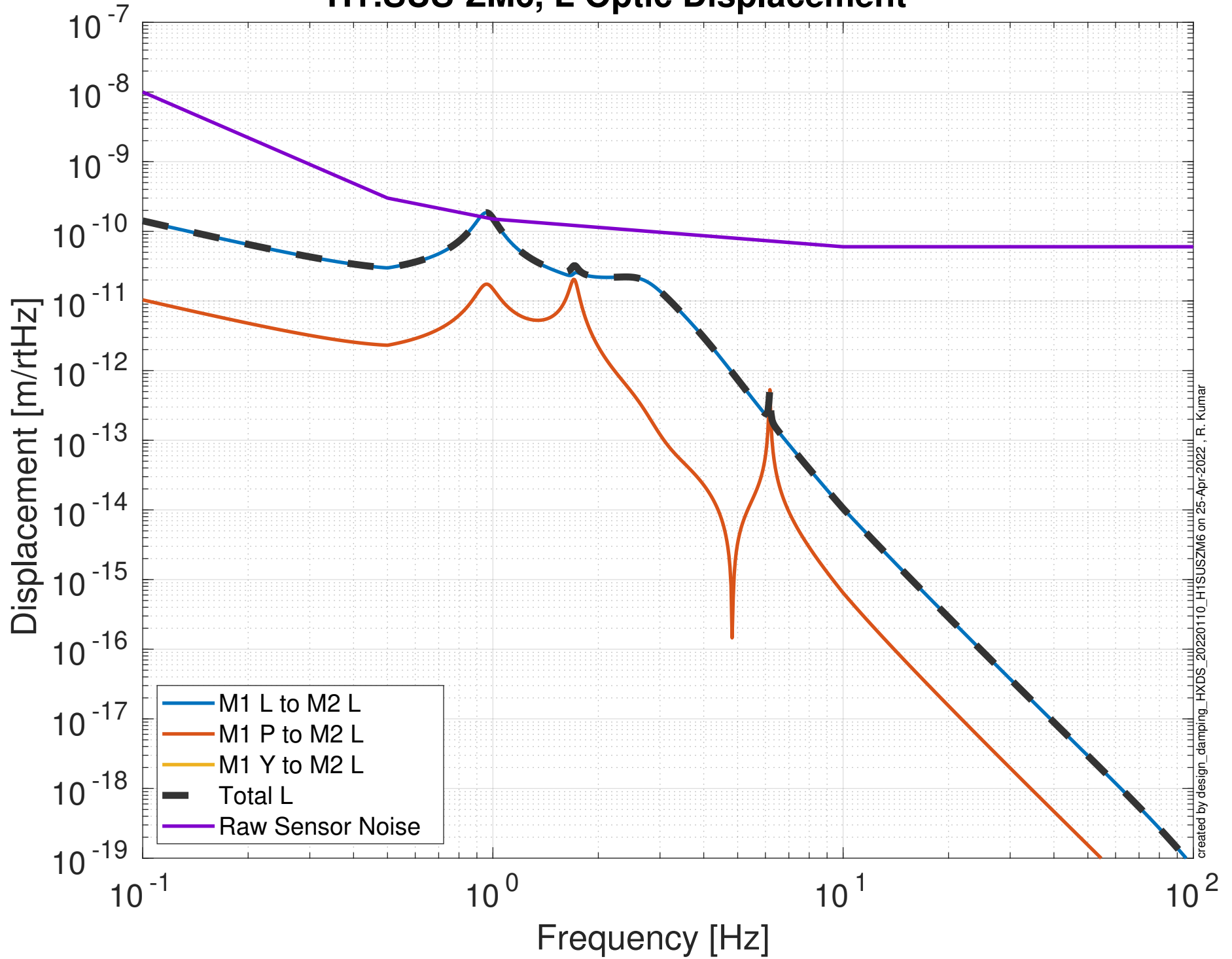


Projected Sus. Point > Optic Seismic Noise Budget H1:SUS-ZM6, L Optic Displacement



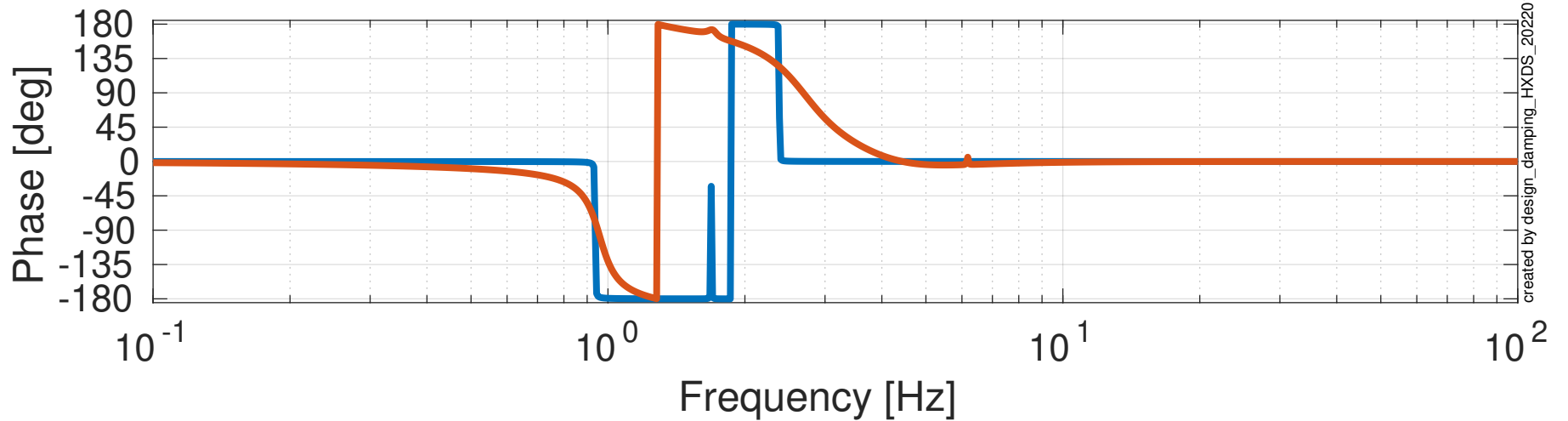
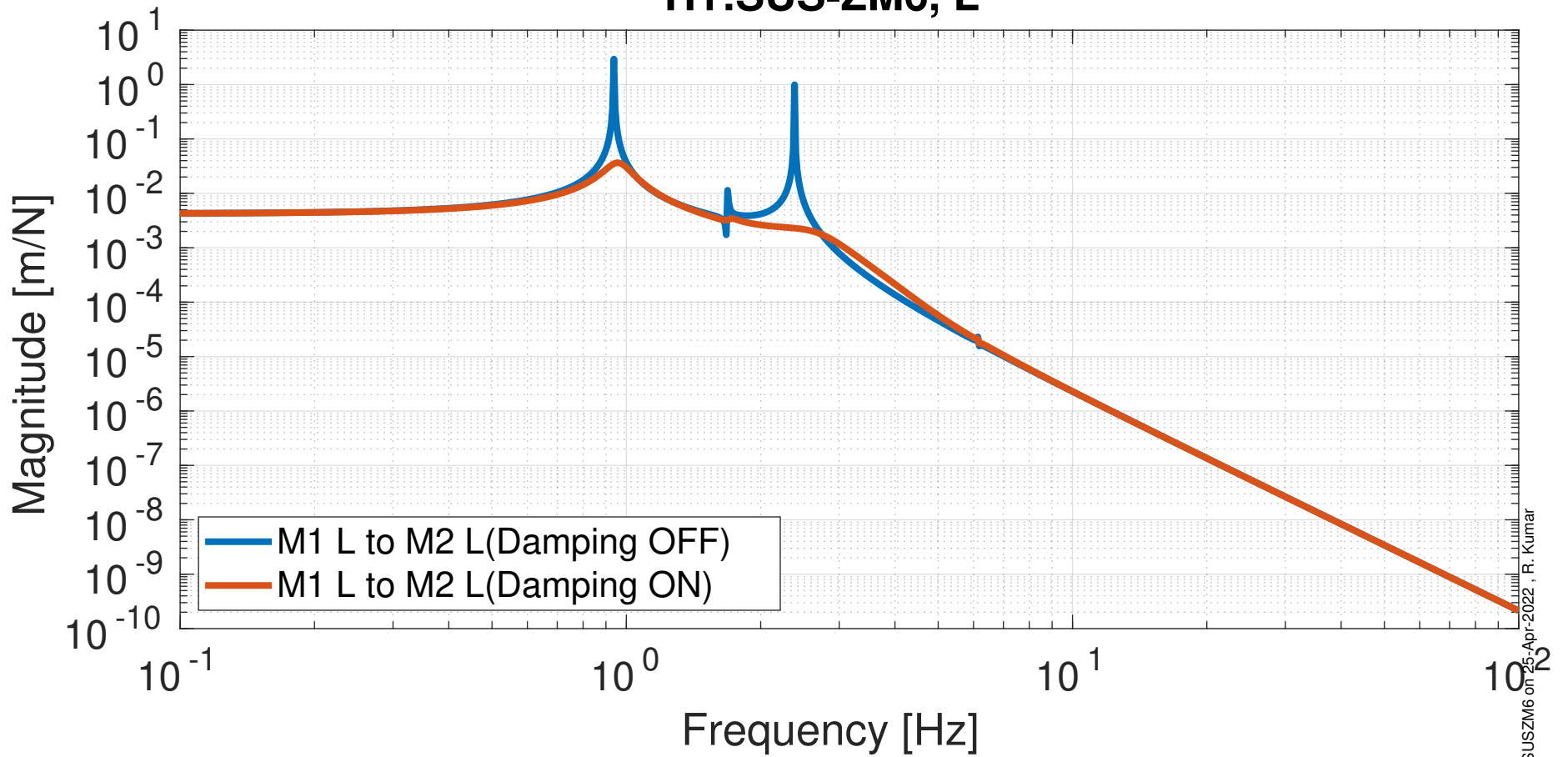
created by design_damping_HXDS_20220110_H1SUSZM6 on 25-Apr-2022 . R. Kumar

Projected Top Mass Sensor > Optic Noise Budget H1:SUS-ZM6, L Optic Displacement

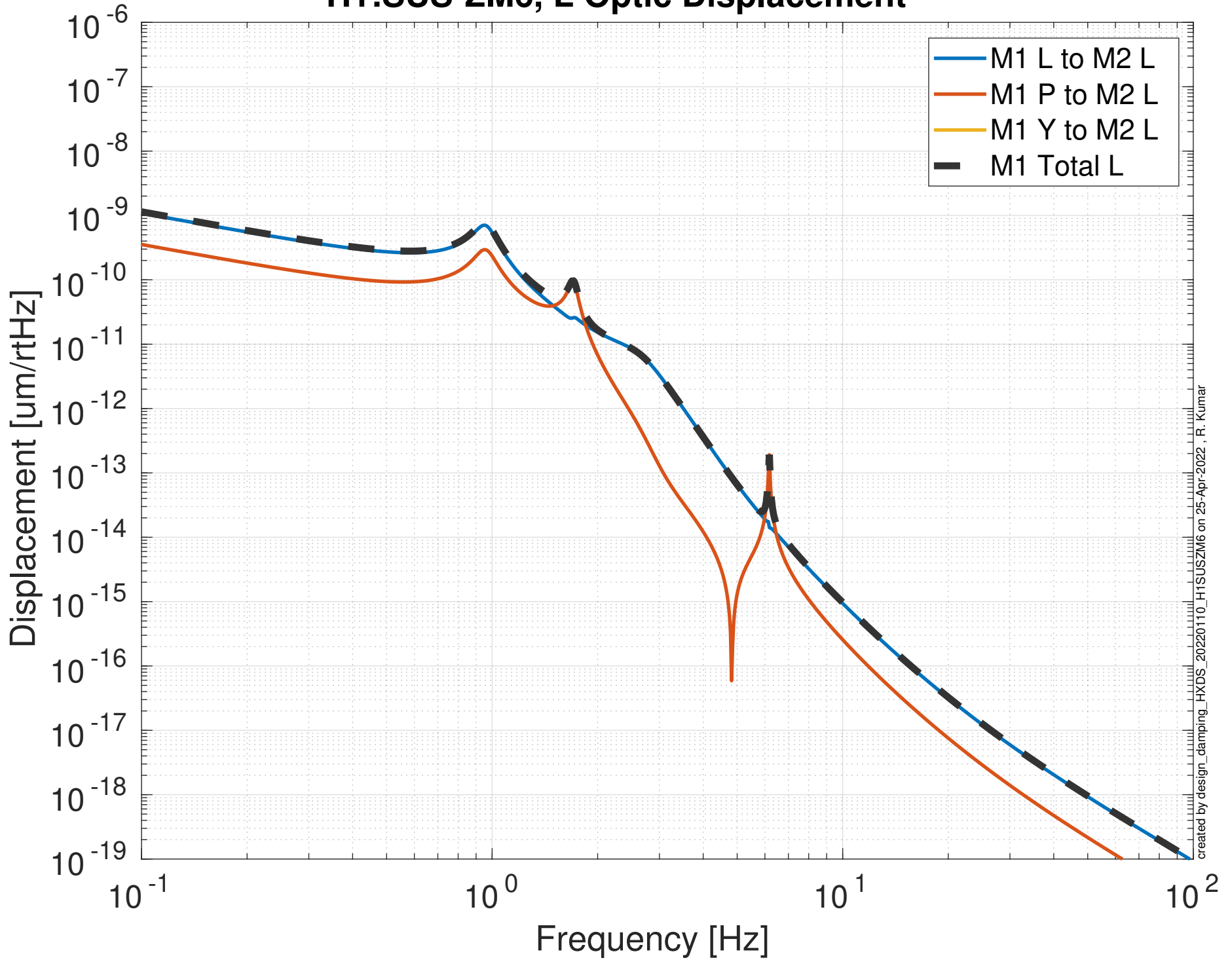


created by design_damping_HXDS_20220110_H1SUSZM6 on 25-Apr-2022 . R. Kumar

Global Control Transfer Functions to Optic H1:SUS-ZM6, L



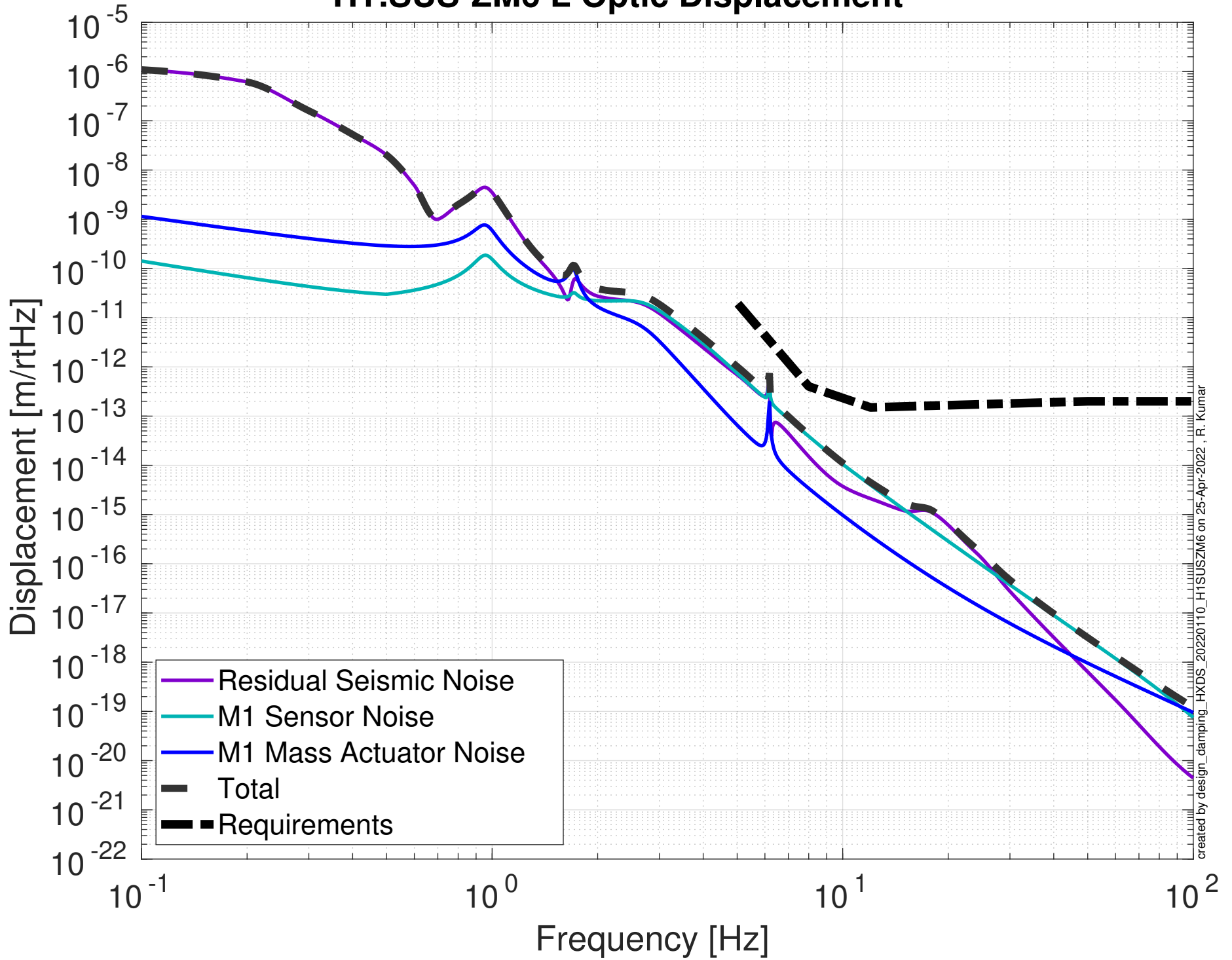
Projected M1 Mass Actuator > Optic Noise Budget H1:SUS-ZM6, L Optic Displacement



created by design_damping_HXDS_20220110_H1SUSZM6 on 25-Apr-2022 . R. Kumar

Damping Loop Performance

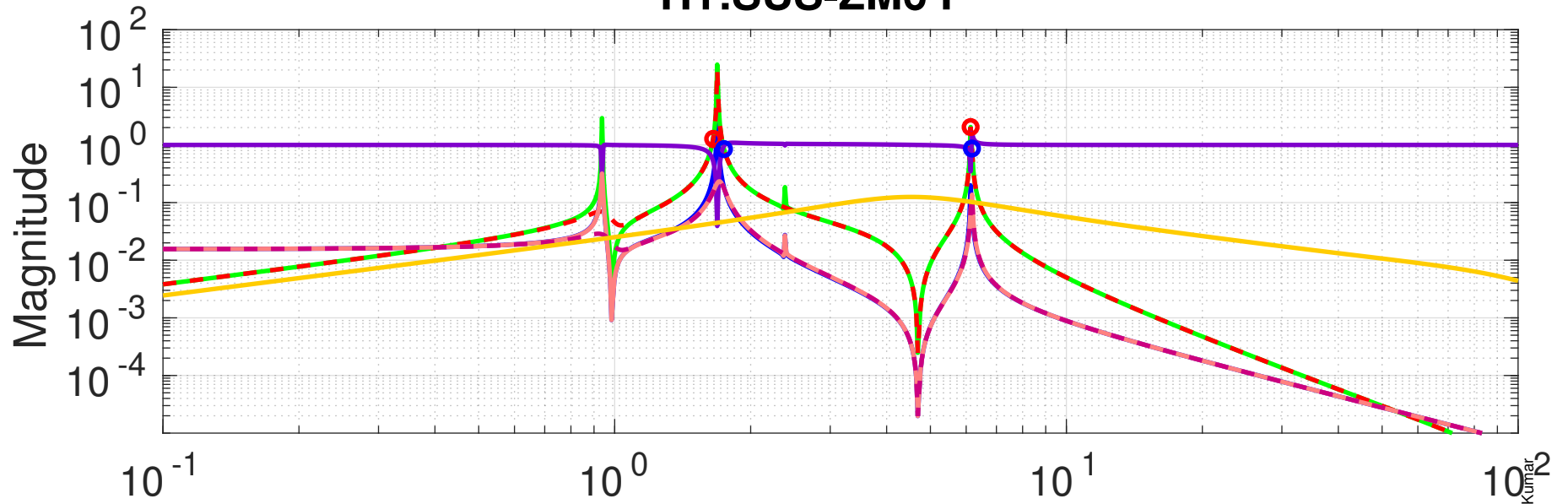
H1:SUS-ZM6 L Optic Displacement



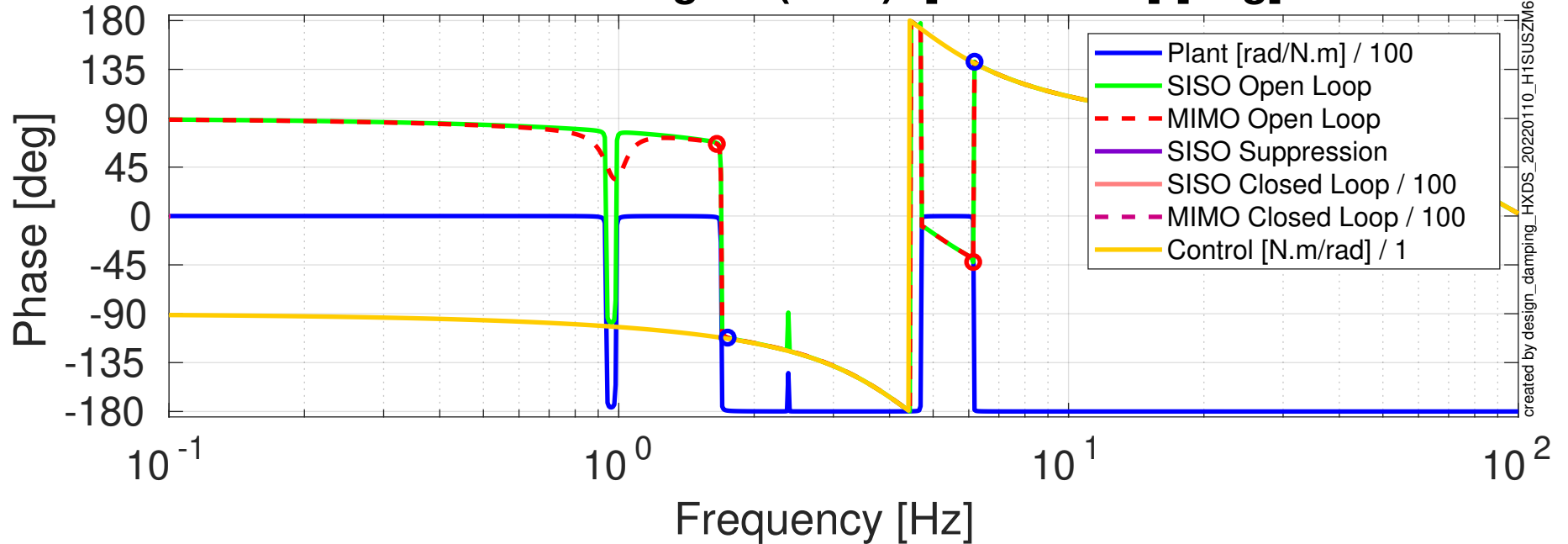
created by design_damping_HXDS_20220110_H1SUSZM6 on 25-Apr-2022 . R. Kumar

Damping Loop Design

H1:SUS-ZM6 P

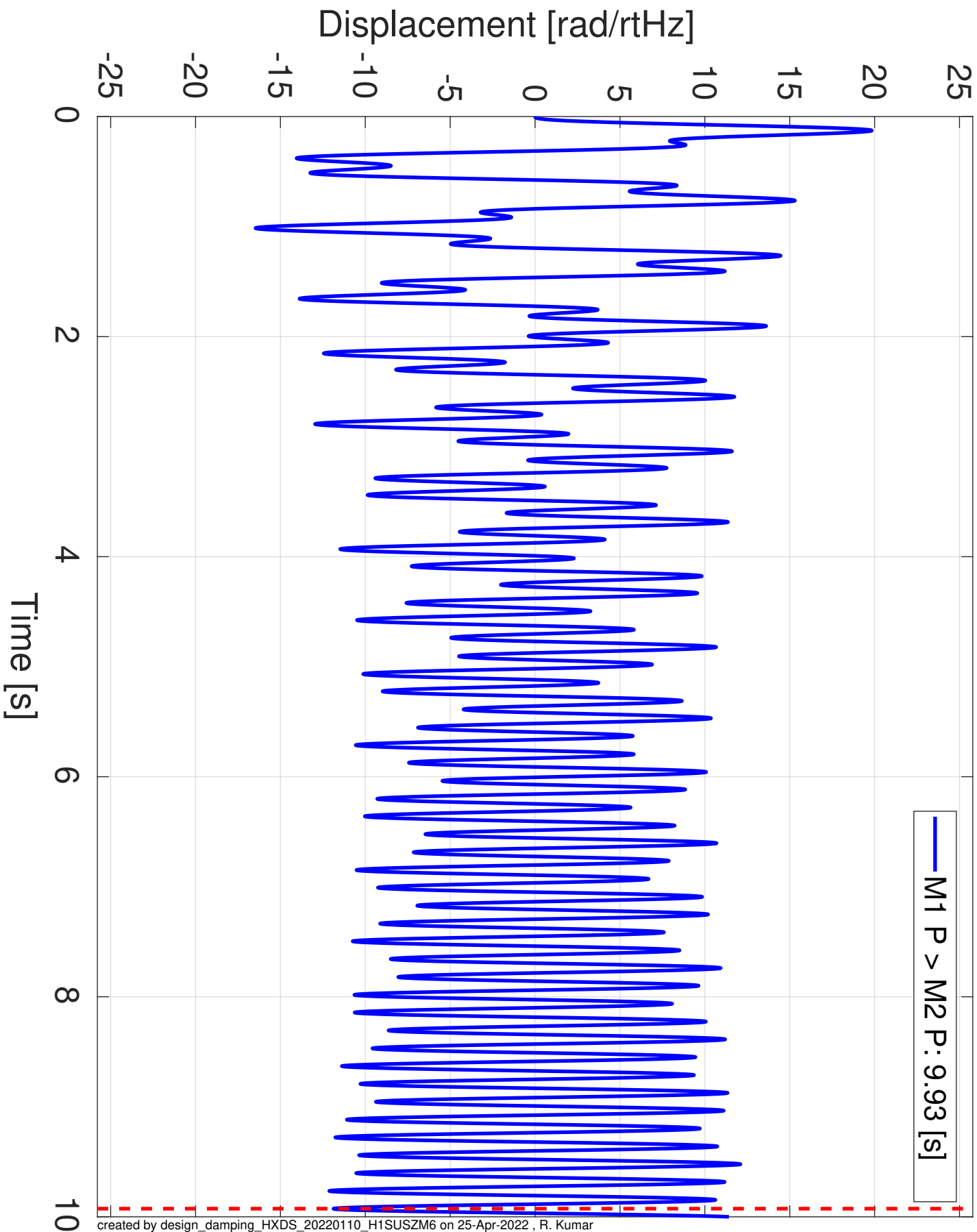


MIMO LUGF Phase Margins (red): [114 222] [deg]
MIMO UUGF Phase Margins (blue): [68 322] [deg]

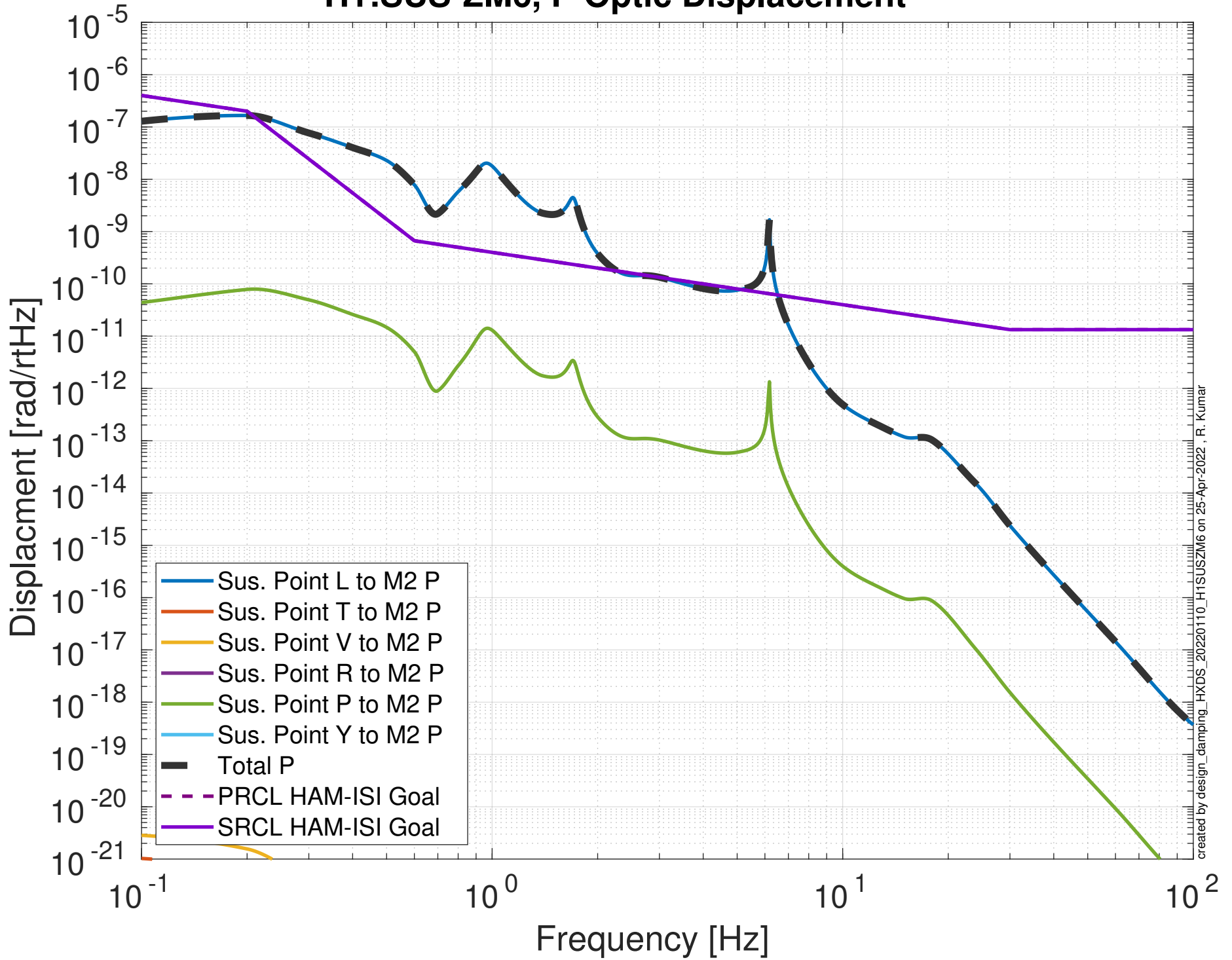


Damped Impulse Response

H1:SUS-ZM6 P

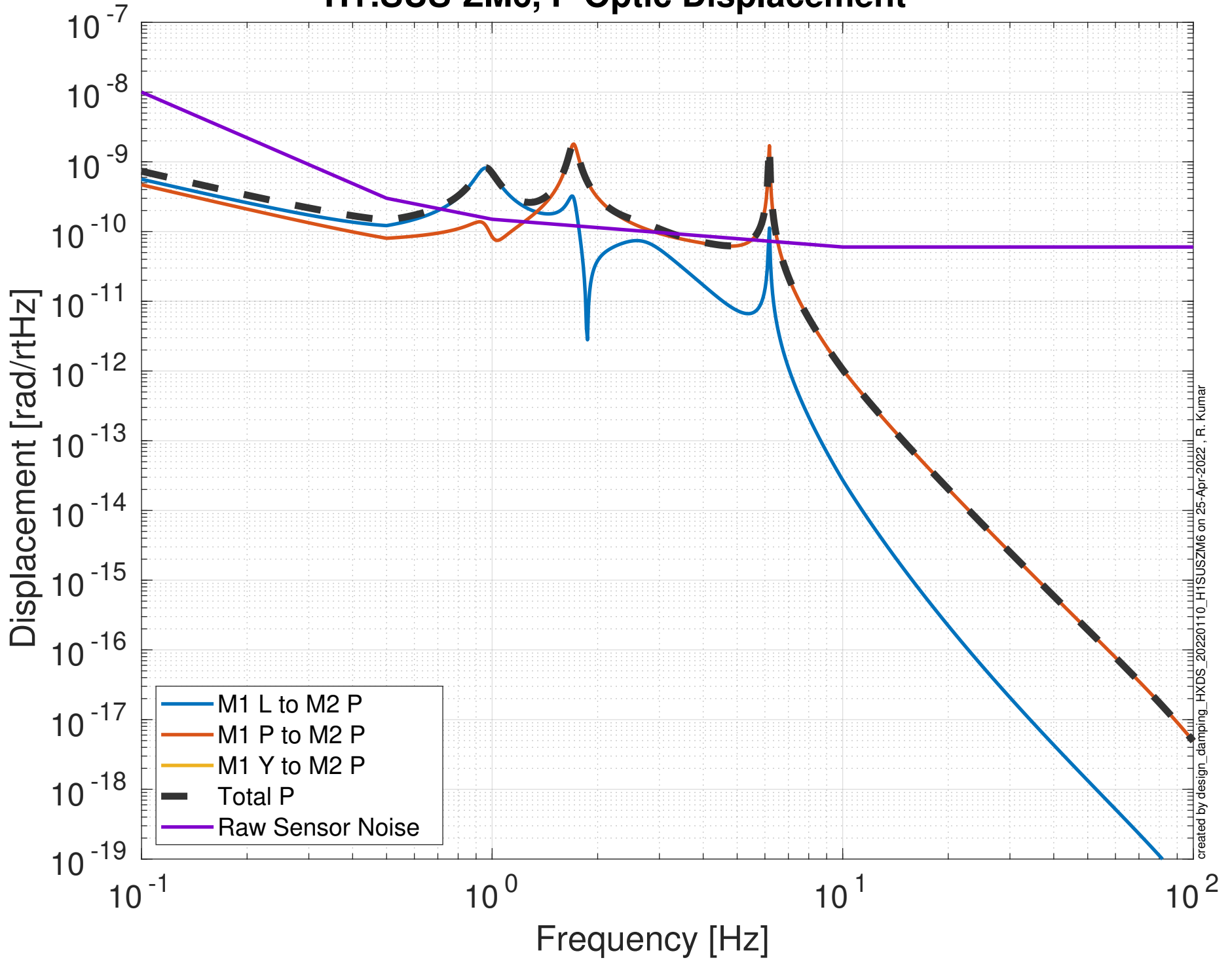


Projected Sus. Point > Optic Seismic Noise Budget H1:SUS-ZM6, P Optic Displacement



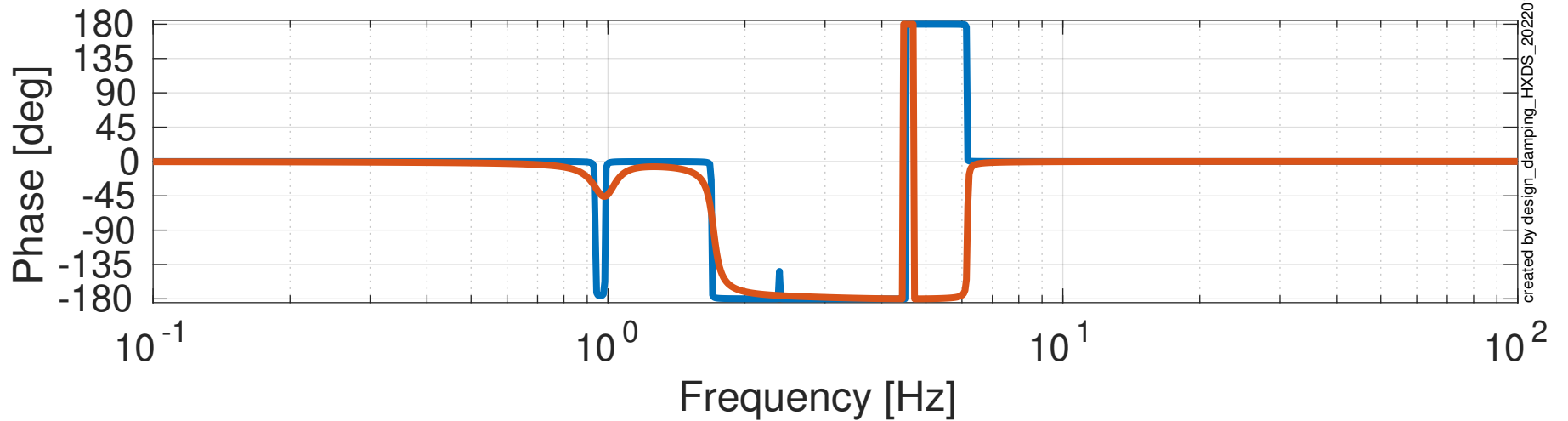
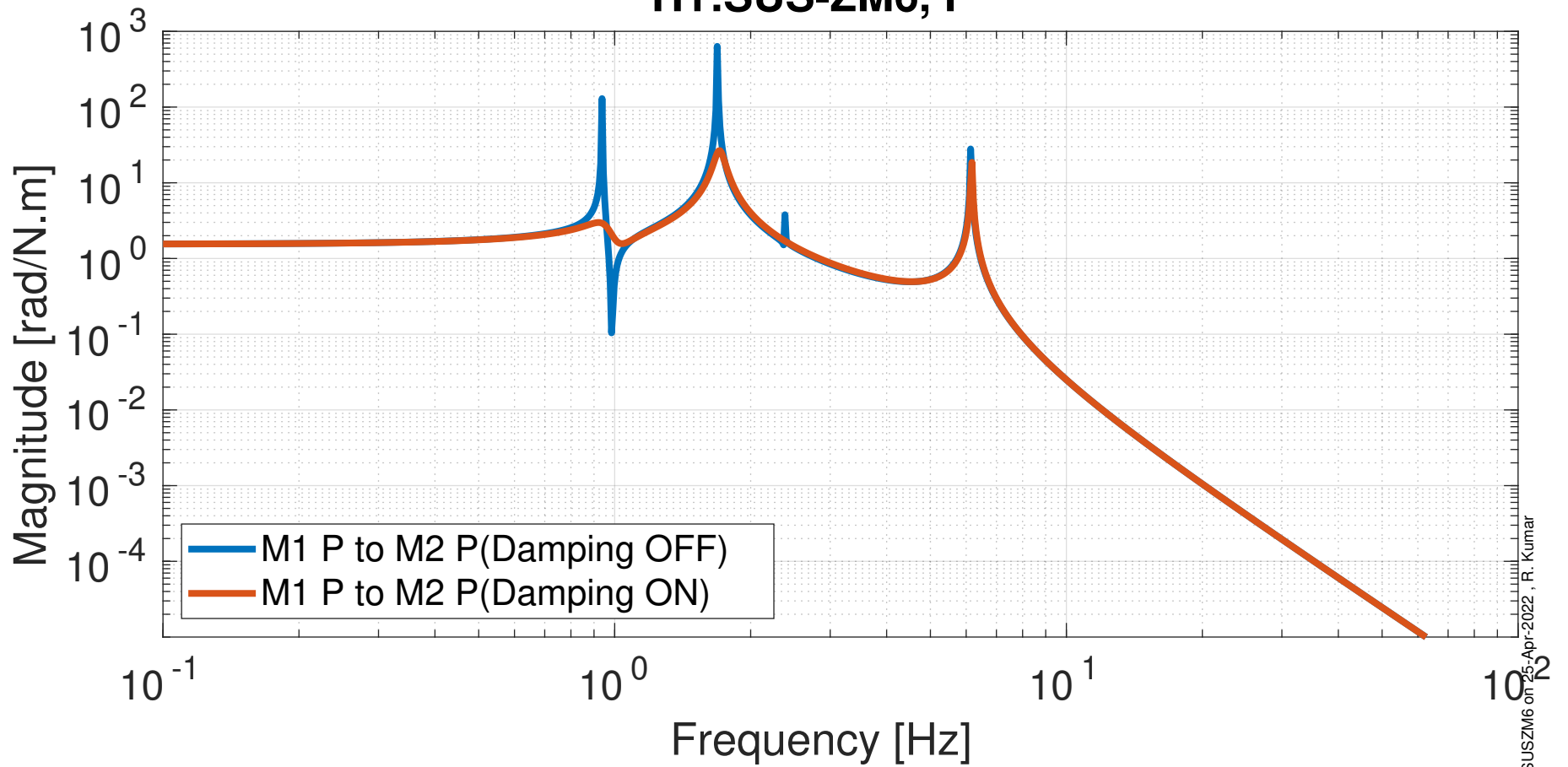
created by design_damping_HXDS_2020110_H1SUSZM6 on 25-Apr-2022 . R. Kumar

Projected Top Mass Sensor > Optic Noise Budget H1:SUS-ZM6, P Optic Displacement

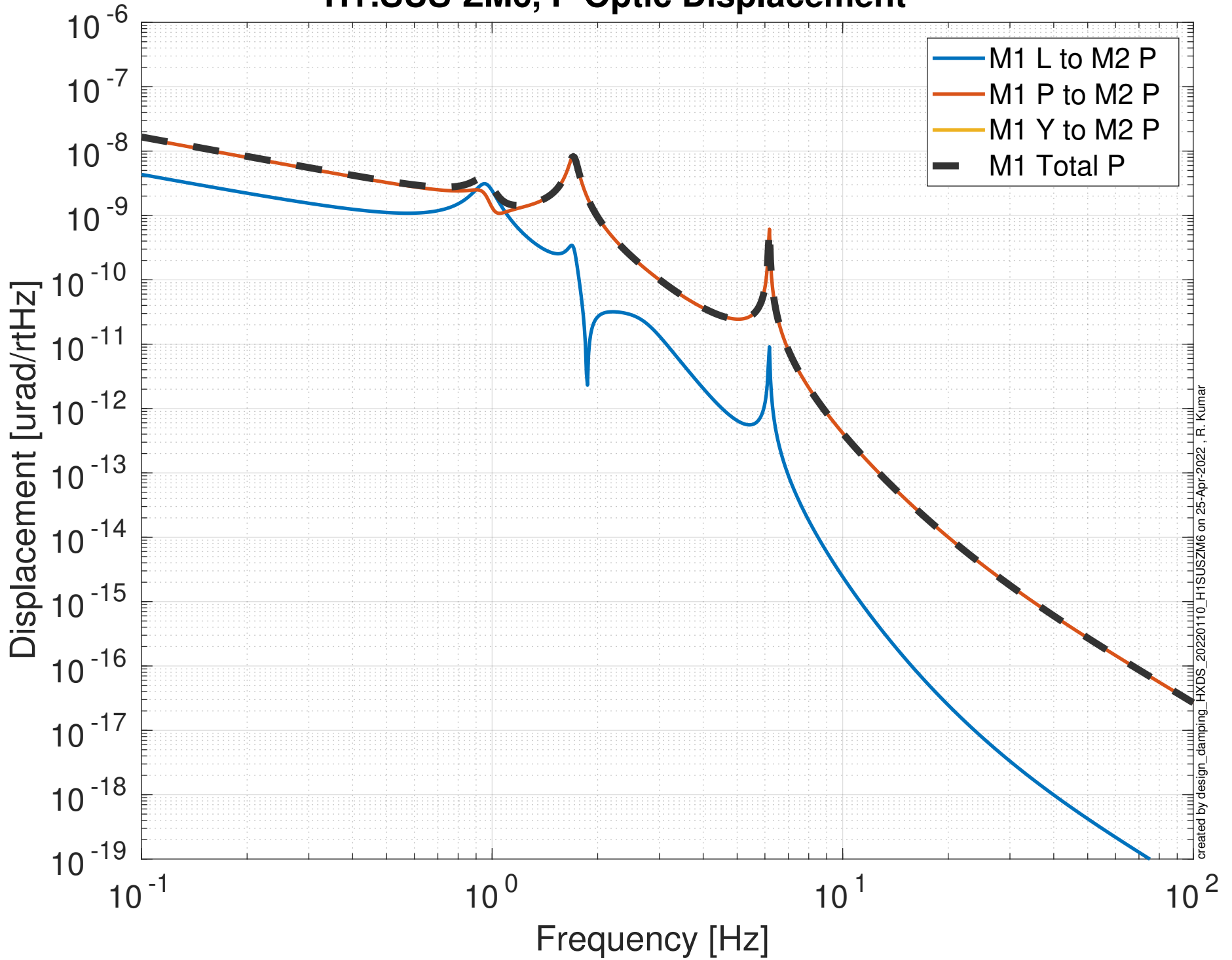


created by design_damping_HXDS_20220110_H1SUSZM6 on 25-Apr-2022 . R. Kumar

Global Control Transfer Functions to Optic H1:SUS-ZM6, P

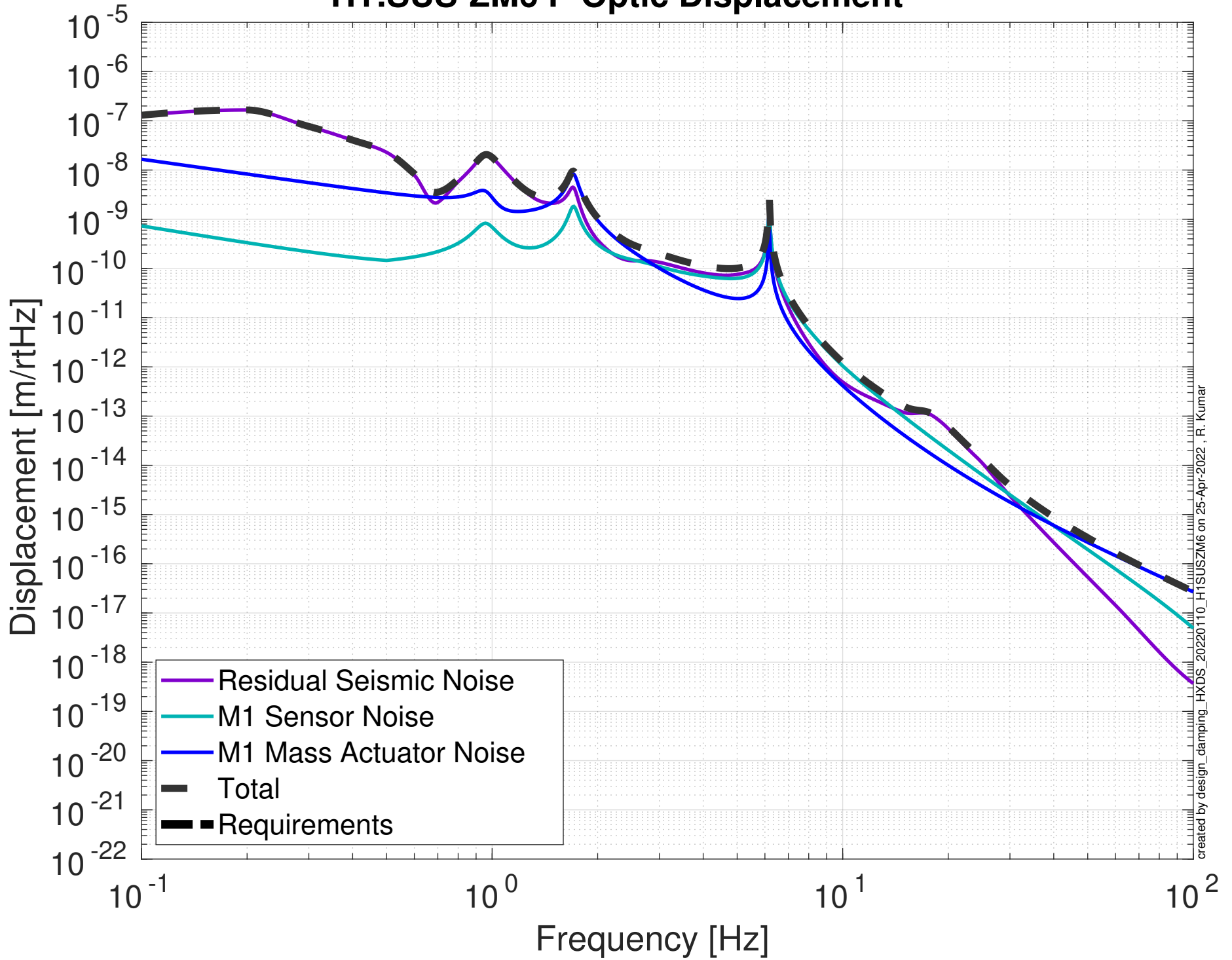


Projected M1 Mass Actuator > Optic Noise Budget H1:SUS-ZM6, P Optic Displacement



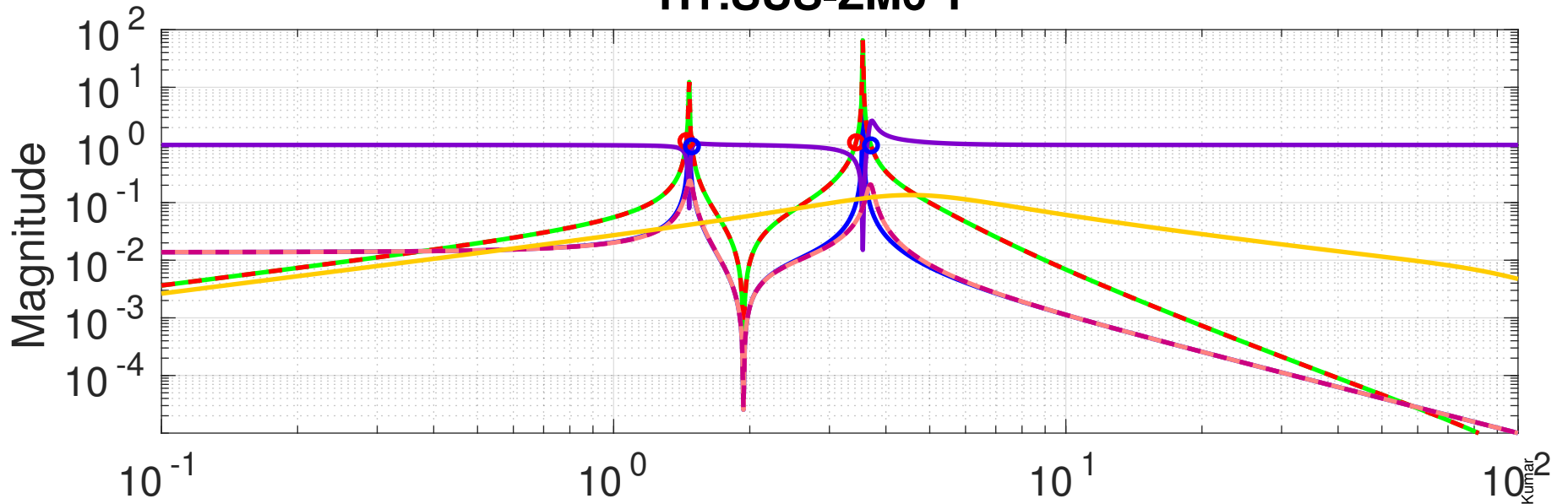
Damping Loop Performance

H1:SUS-ZM6 P Optic Displacement

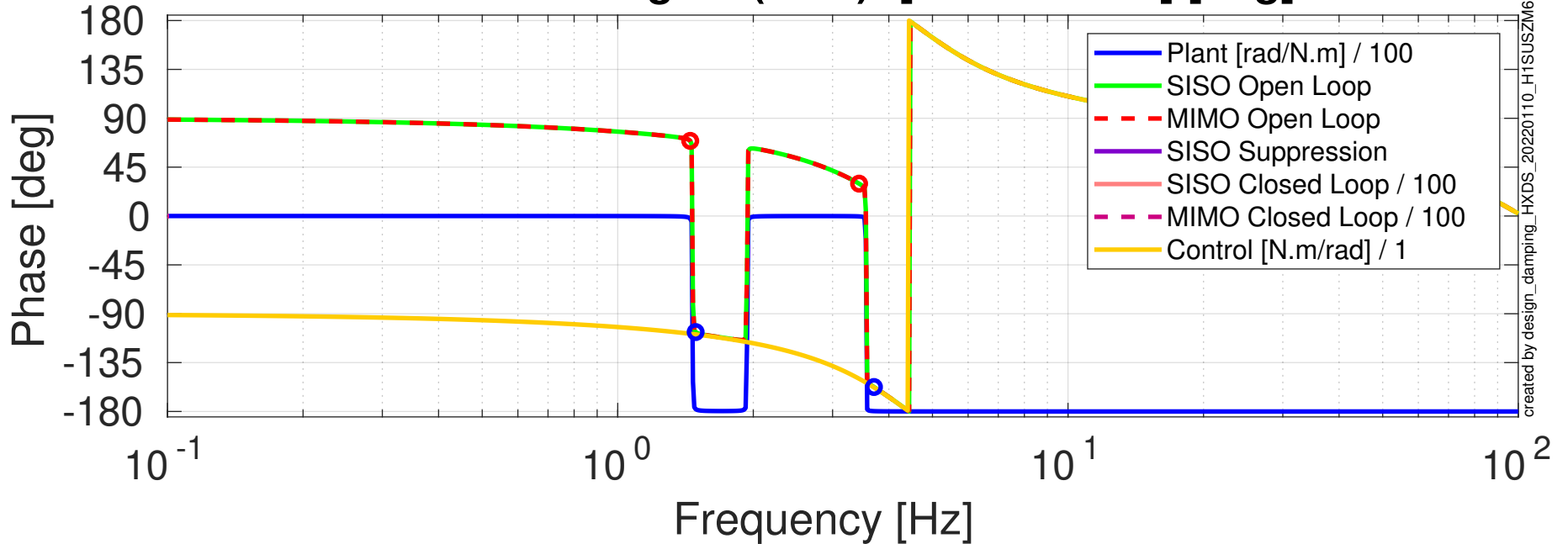


Damping Loop Design

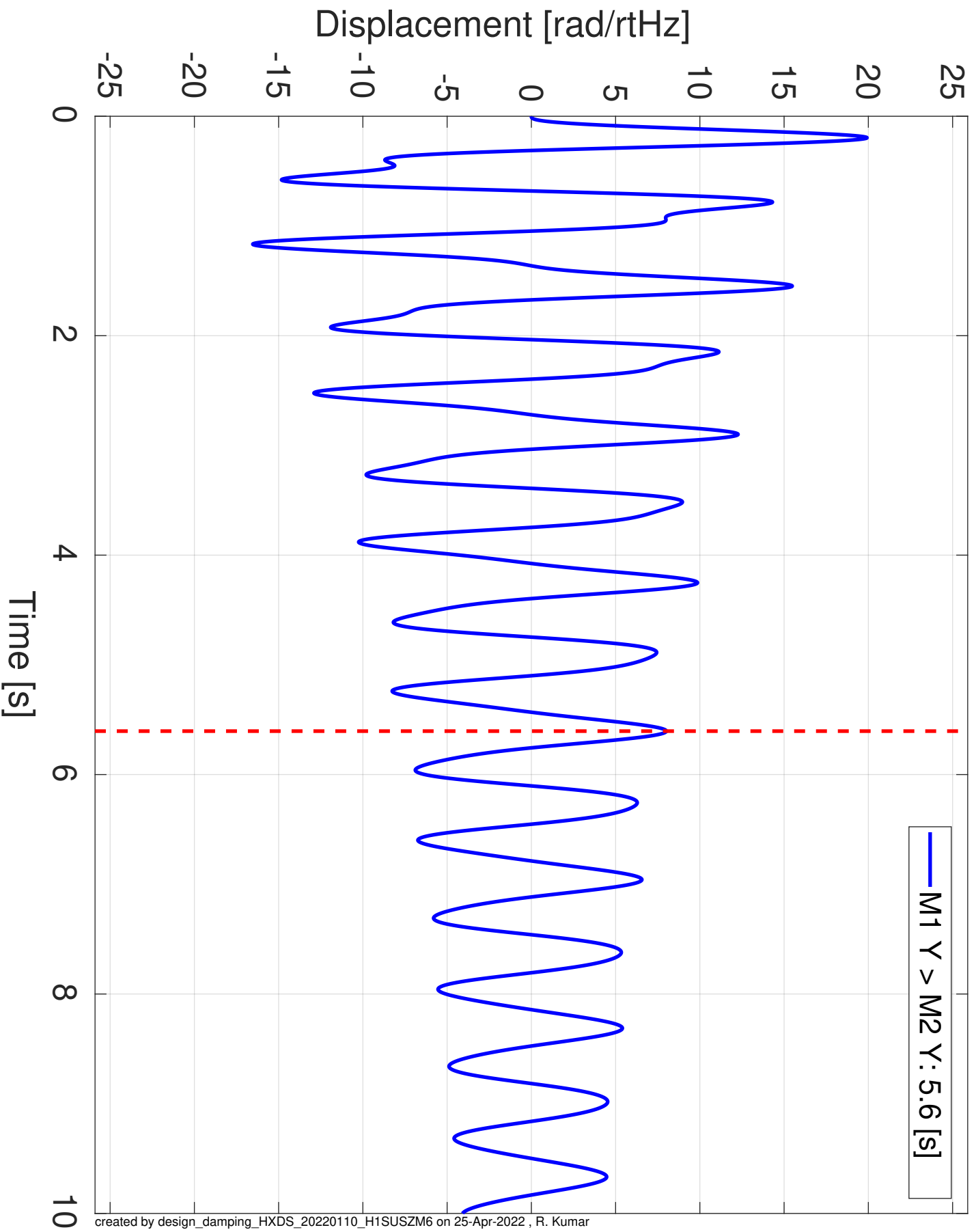
H1:SUS-ZM6 Y



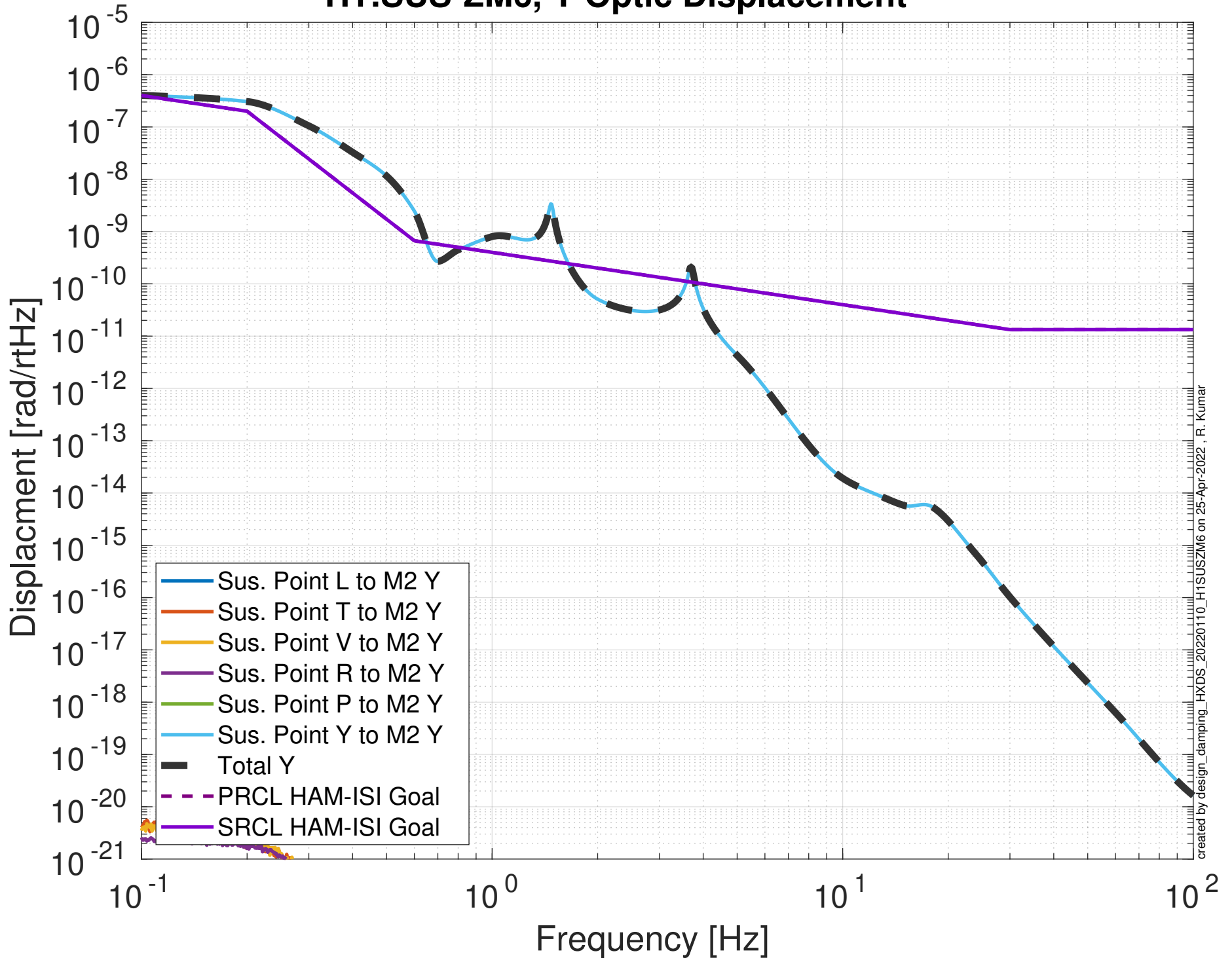
MIMO LUGF Phase Margins (red): [111 150] [deg]
MIMO UUGF Phase Margins (blue): [73.1 22.5] [deg]



Damped Impulse Response H1:SUS-ZM6 Y

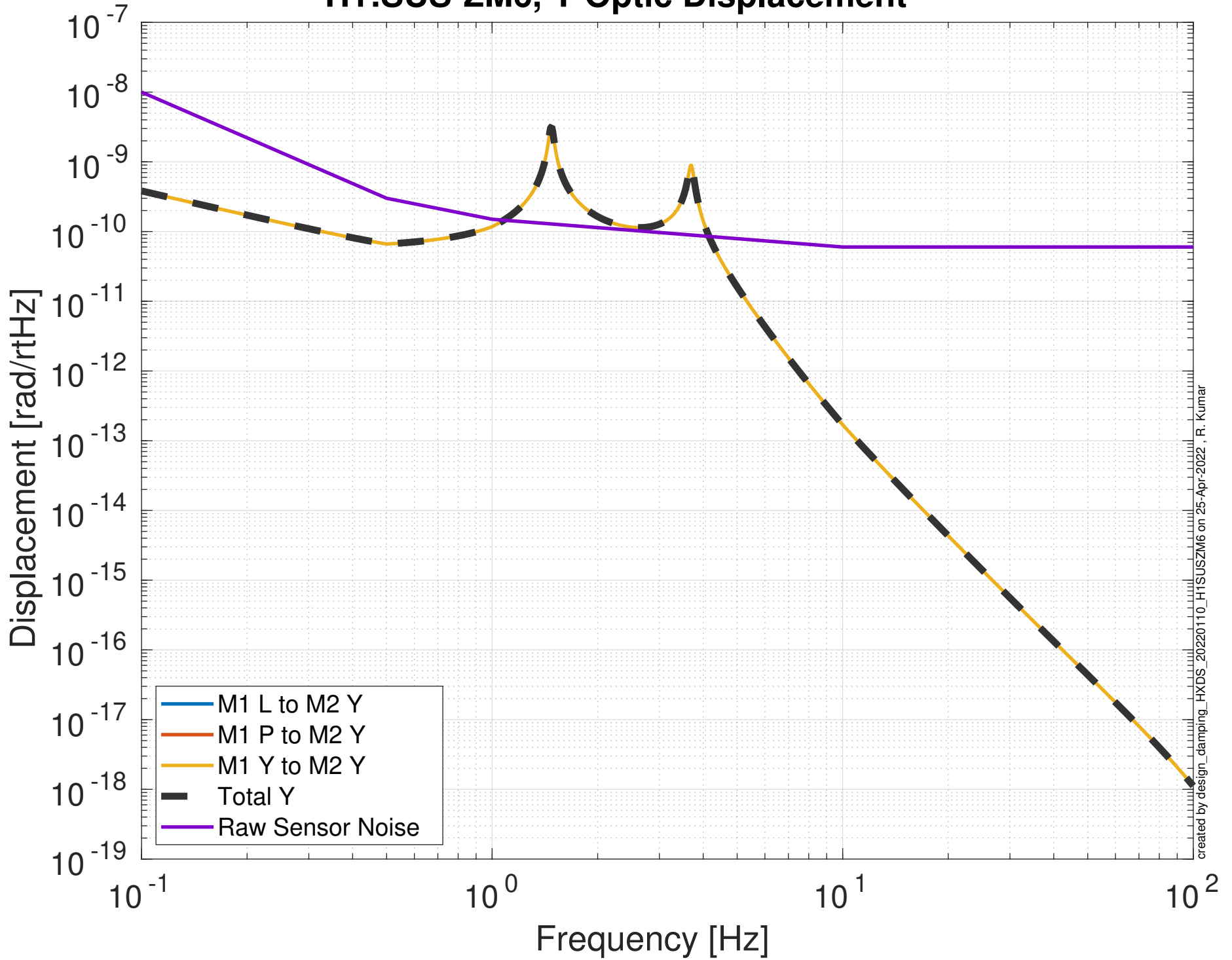


Projected Sus. Point > Optic Seismic Noise Budget H1:SUS-ZM6, Y Optic Displacement



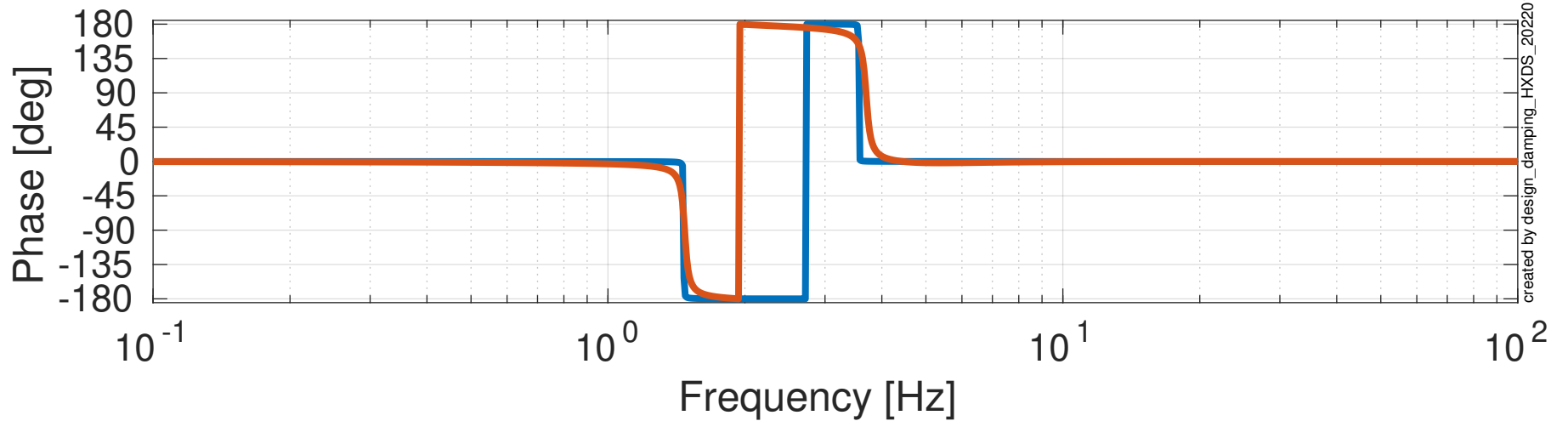
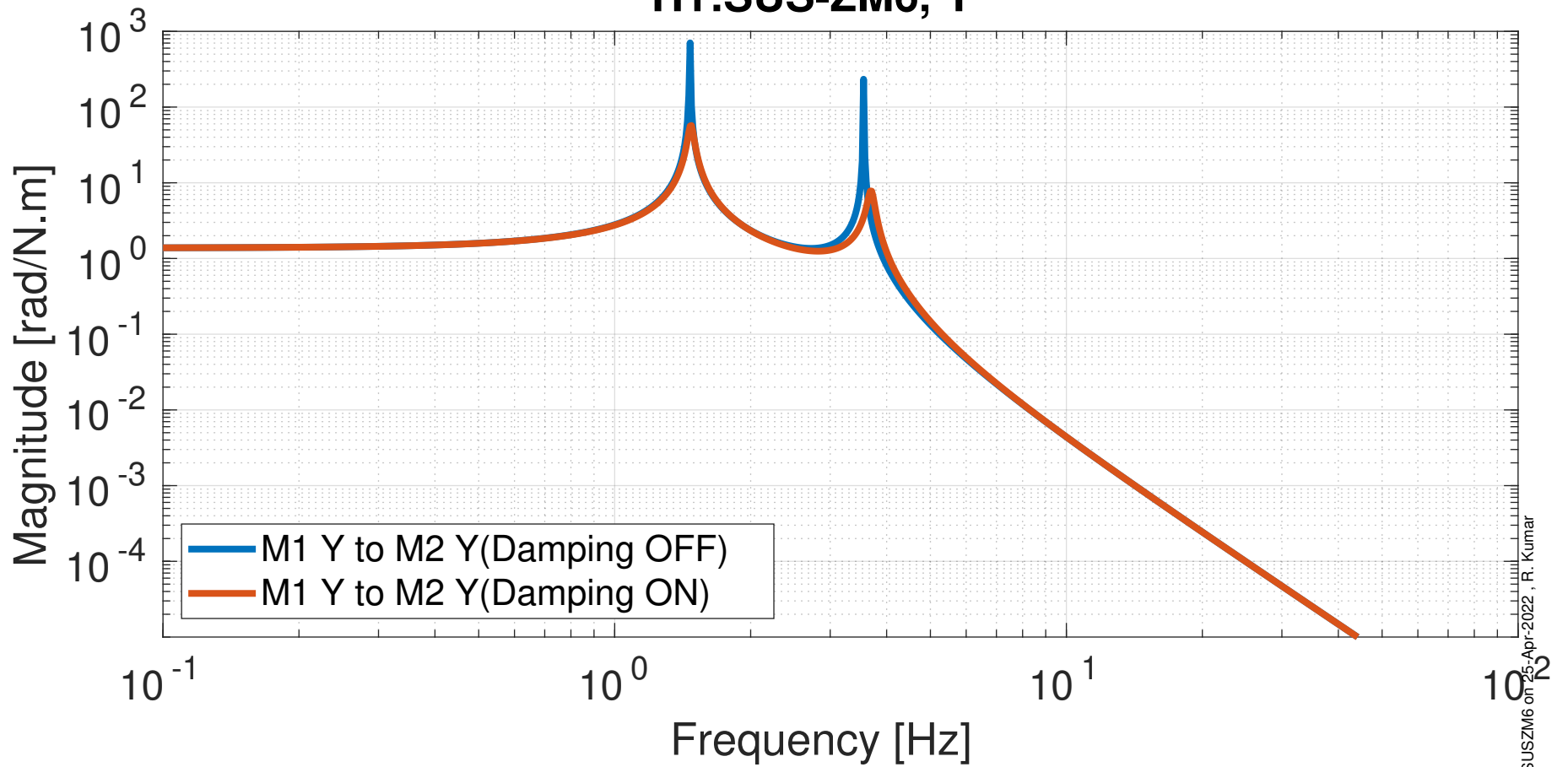
created by design_damping_HXDS_20220110_H1SUSZM6 on 25-Apr-2022 . R. Kumar

Projected Top Mass Sensor > Optic Noise Budget H1:SUS-ZM6, Y Optic Displacement

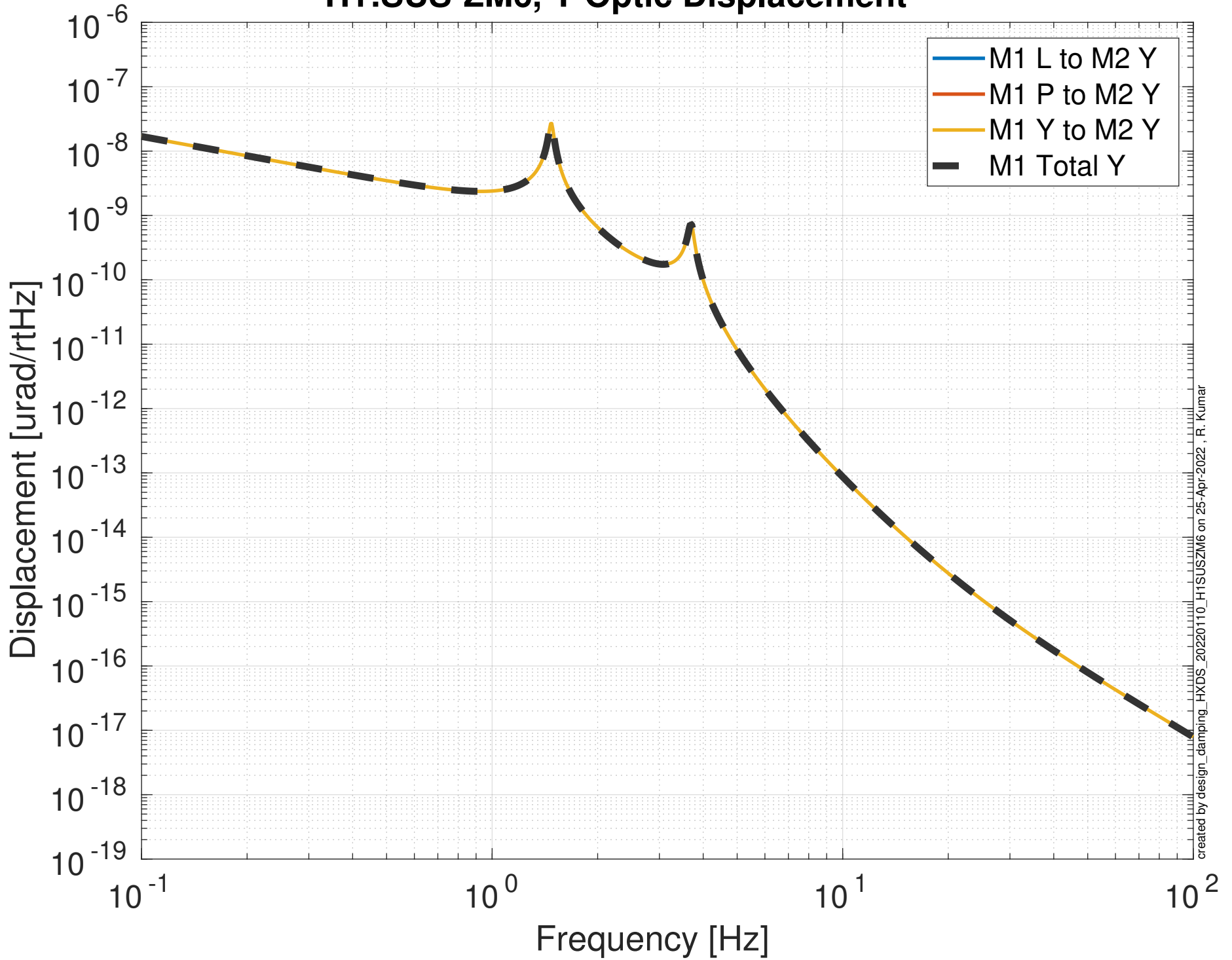


created by design_damping_HXDS_20220110_H1SUSZM6 on 25-Apr-2022 . R. Kumar

Global Control Transfer Functions to Optic H1:SUS-ZM6, Y



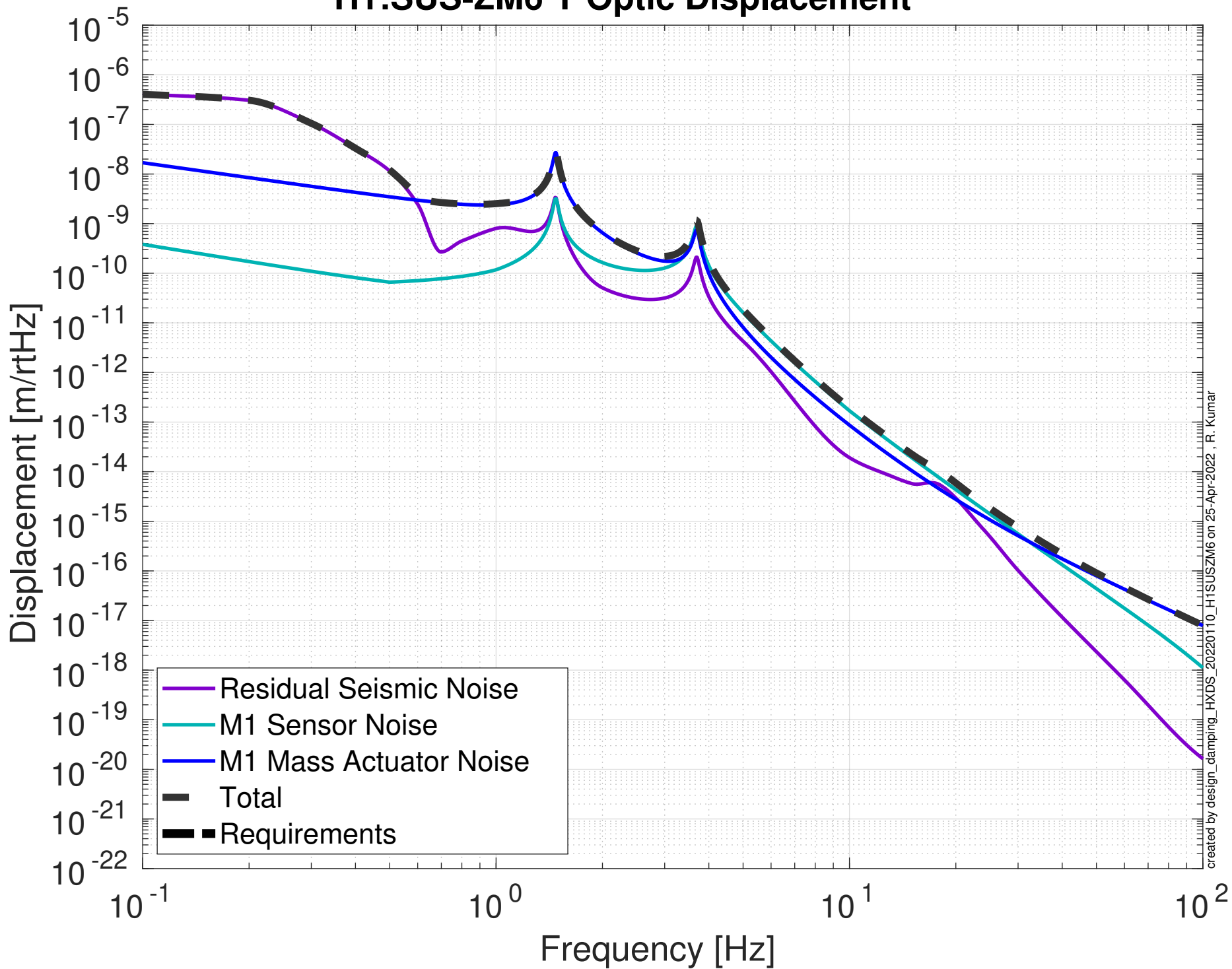
Projected M1 Mass Actuator > Optic Noise Budget H1:SUS-ZM6, Y Optic Displacement



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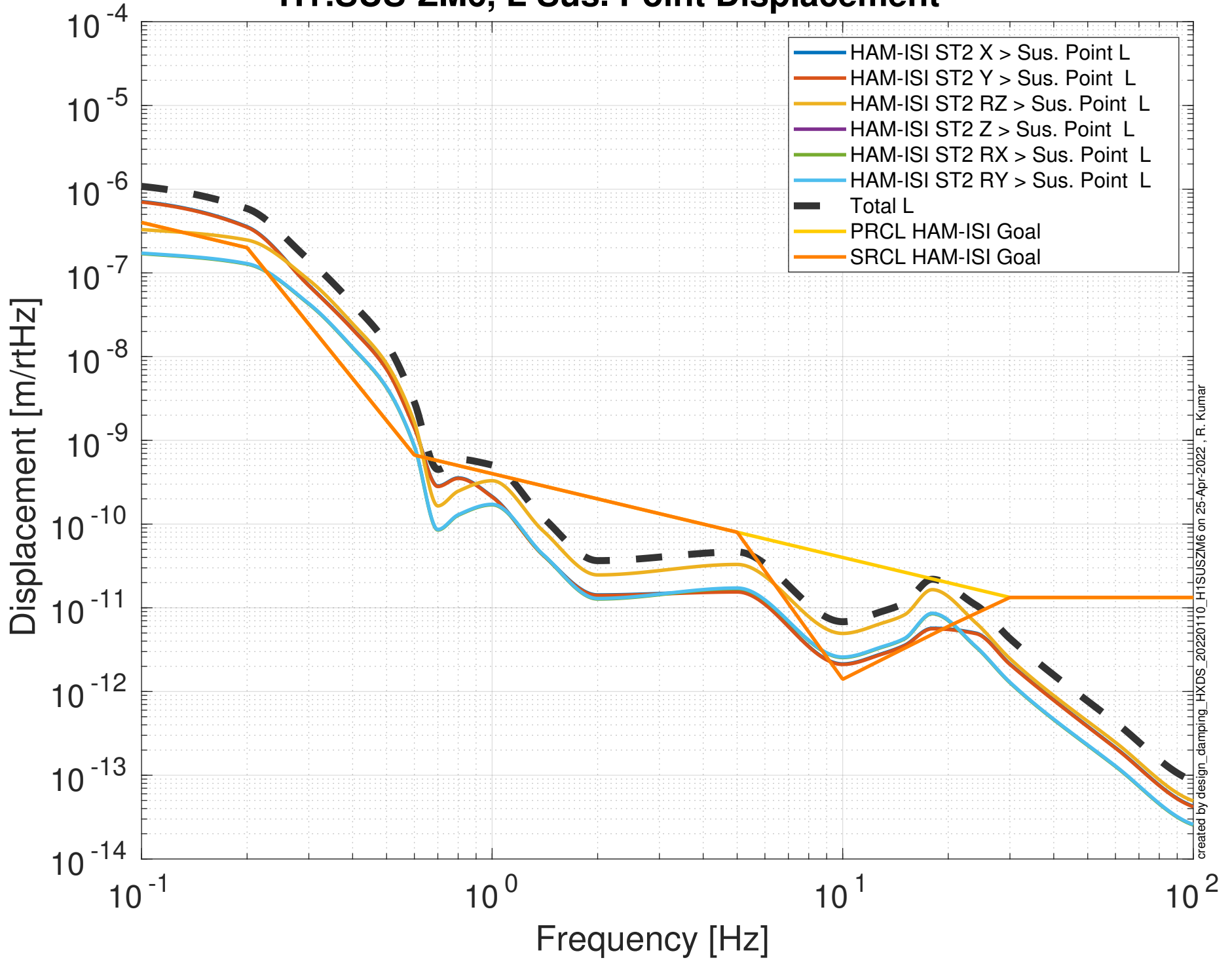
Damping Loop Performance

H1:SUS-ZM6 Y Optic Displacement



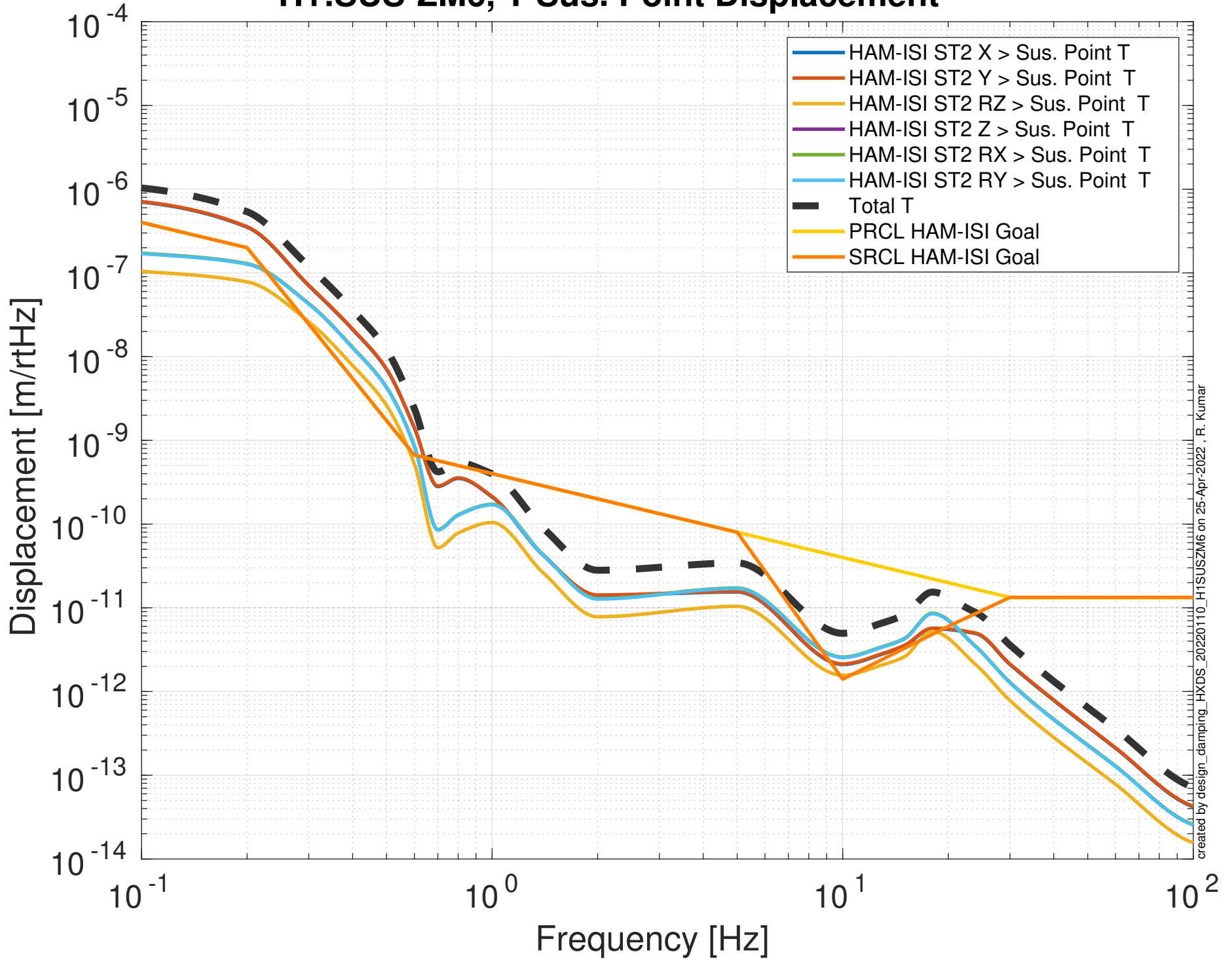
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Projected ISI Seismic Noise Budget H1:SUS-ZM6, L Sus. Point Displacement



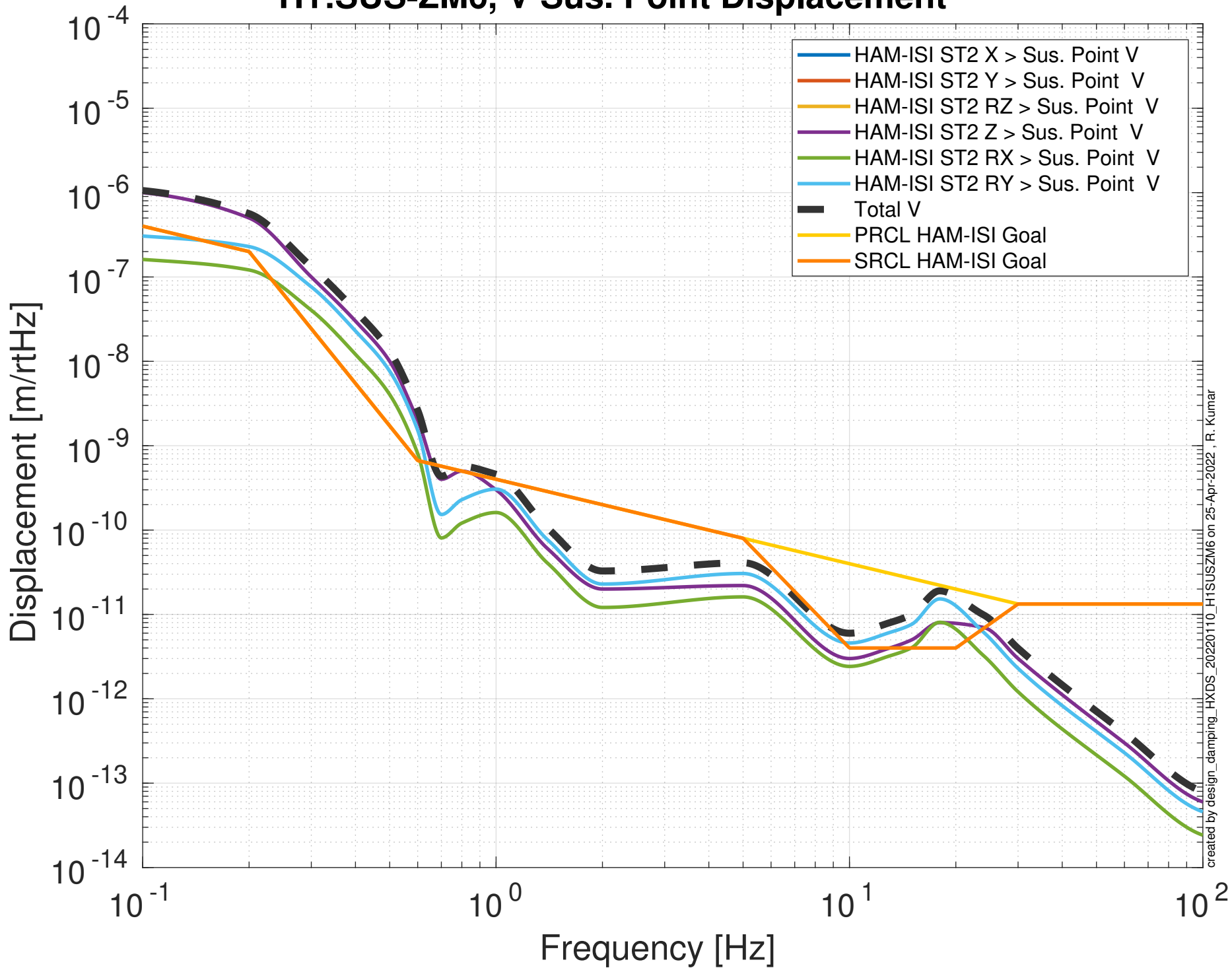
created by design_damping_HXDS_2020110_H1SUSZM6 on 25-Apr-2022 . R. Kumar

Projected ISI Seismic Noise Budget H1:SUS-ZM6, T Sus. Point Displacement



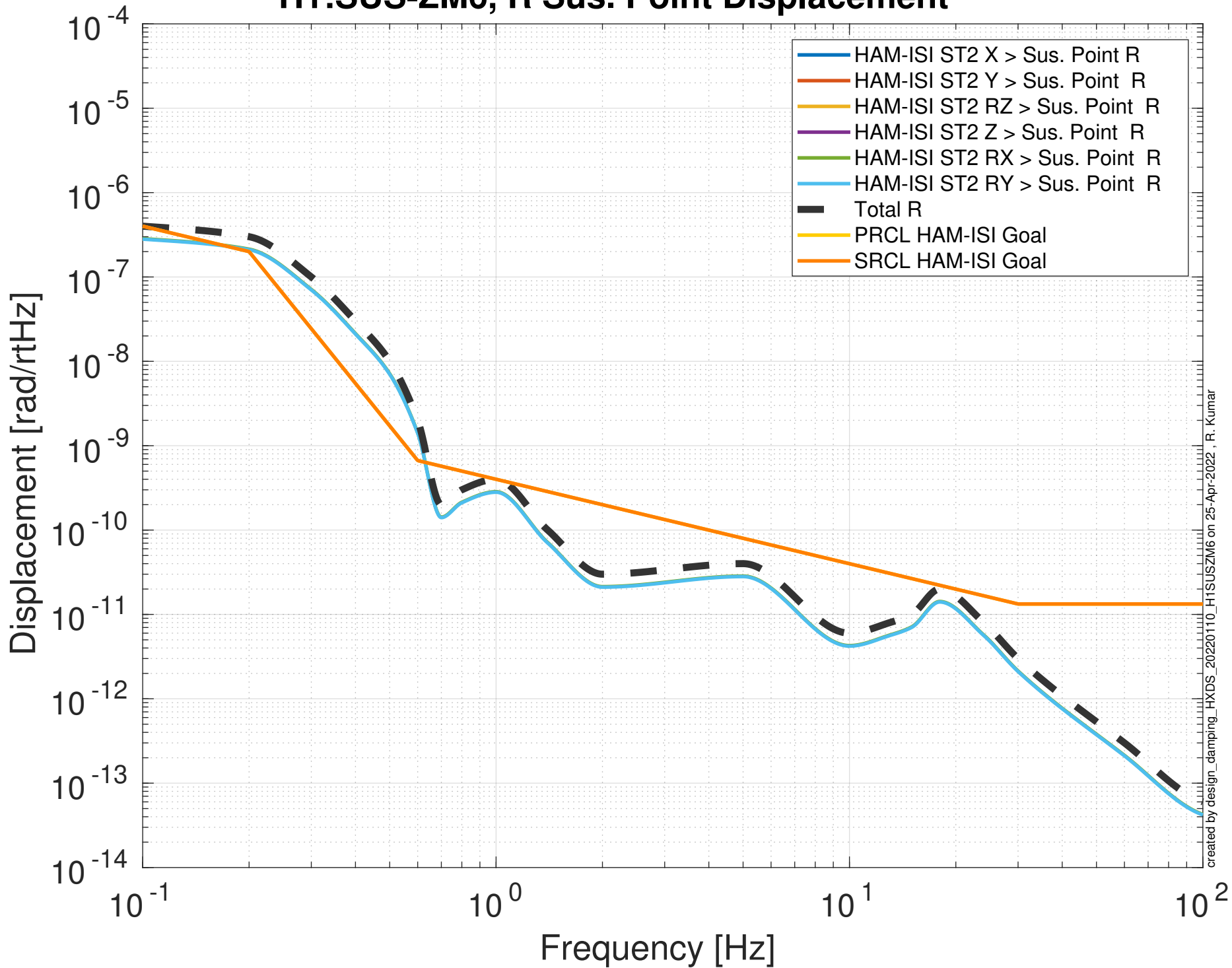
created by design_damping_HXDS_20220110_H1SUSZM6 on 25-Apr-2022 . R. Kumar

Projected ISI Seismic Noise Budget H1:SUS-ZM6, V Sus. Point Displacement



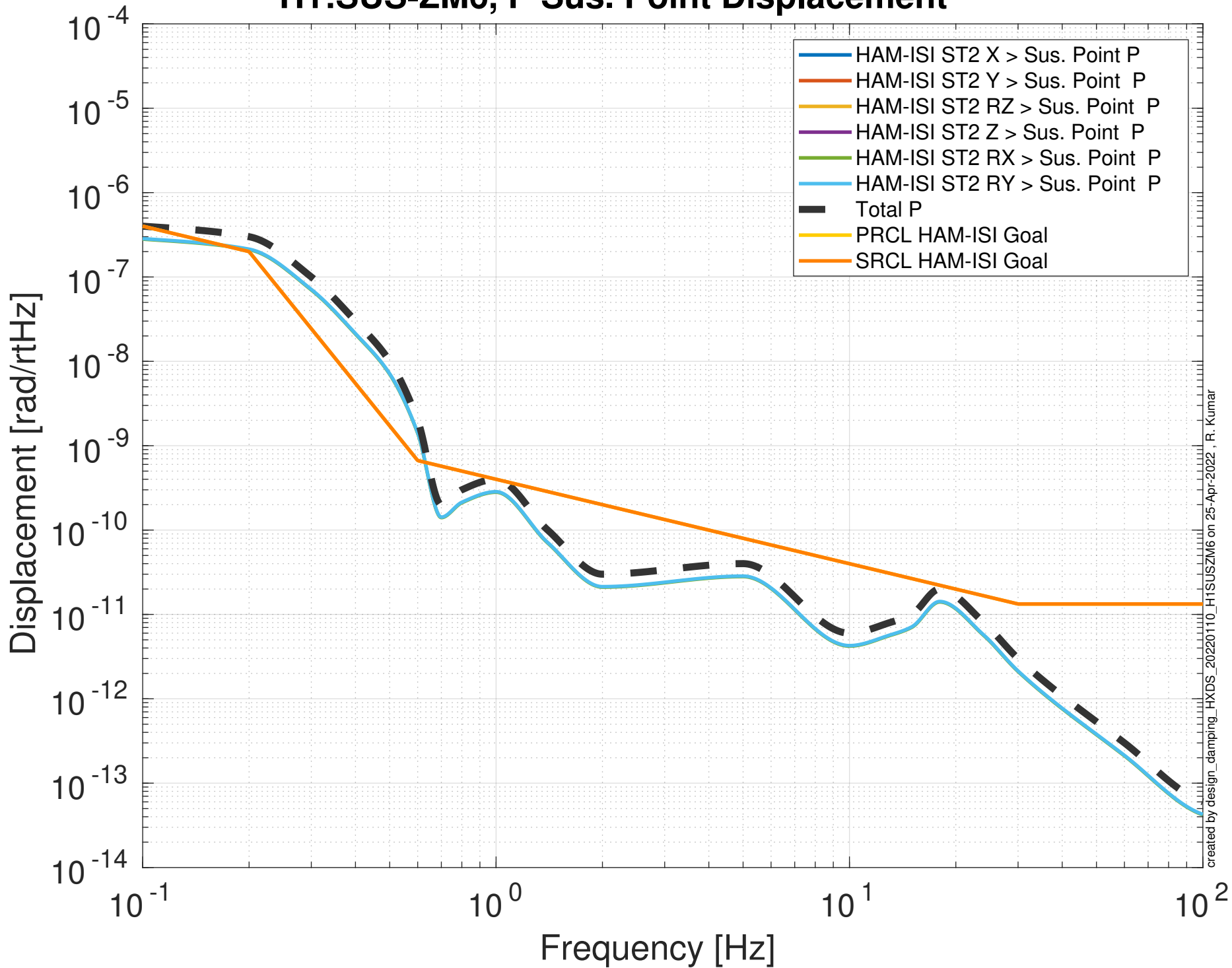
created by design_damping_HXDS_20220110_H1SUSZM6 on 25-Apr-2022 . R. Kumar

Projected ISI Seismic Noise Budget H1:SUS-ZM6, R Sus. Point Displacement



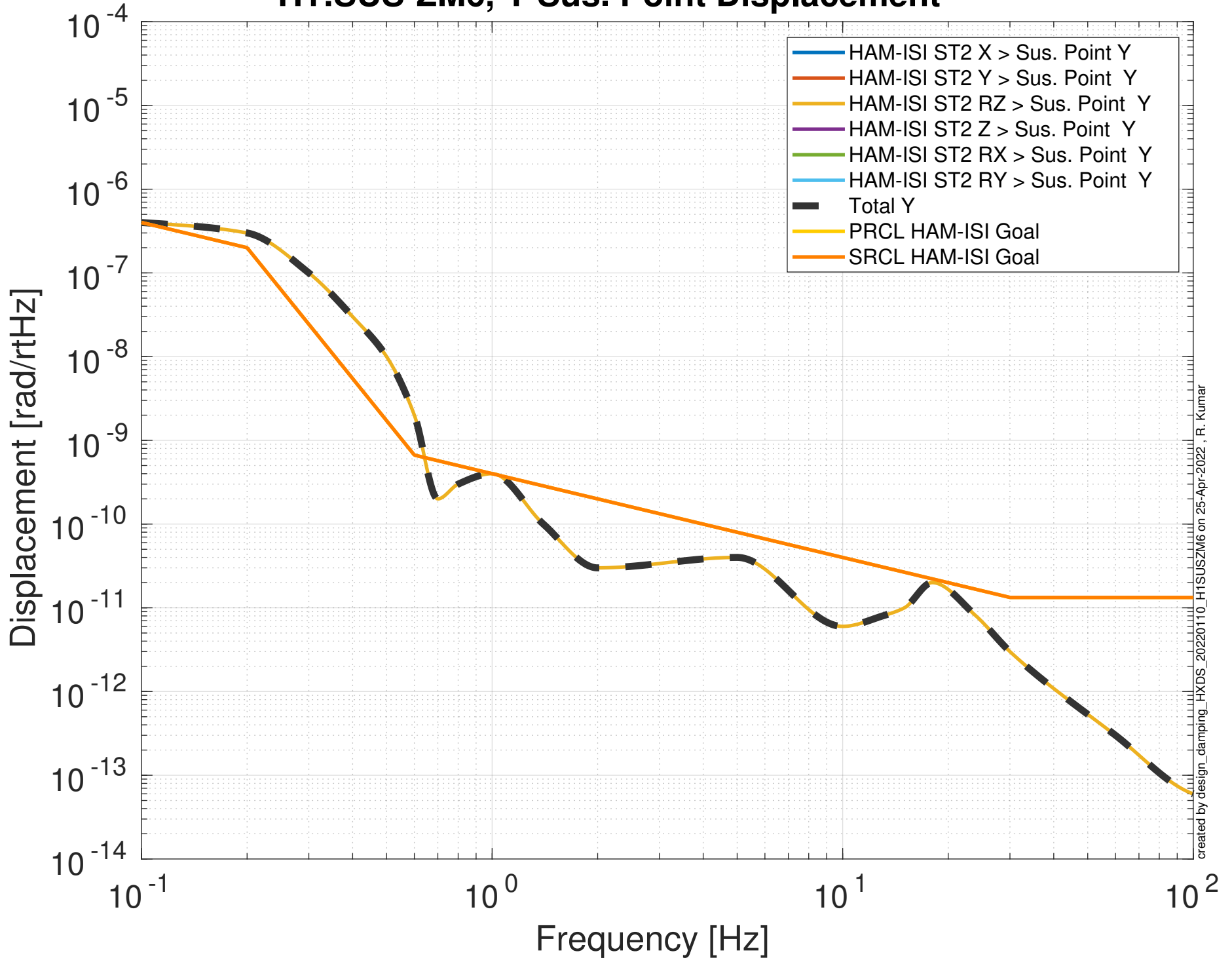
created by design_damping_HXDS_20220110_H1SUSZM6 on 25-Apr-2022 . R. Kumar

Projected ISI Seismic Noise Budget H1:SUS-ZM6, P Sus. Point Displacement



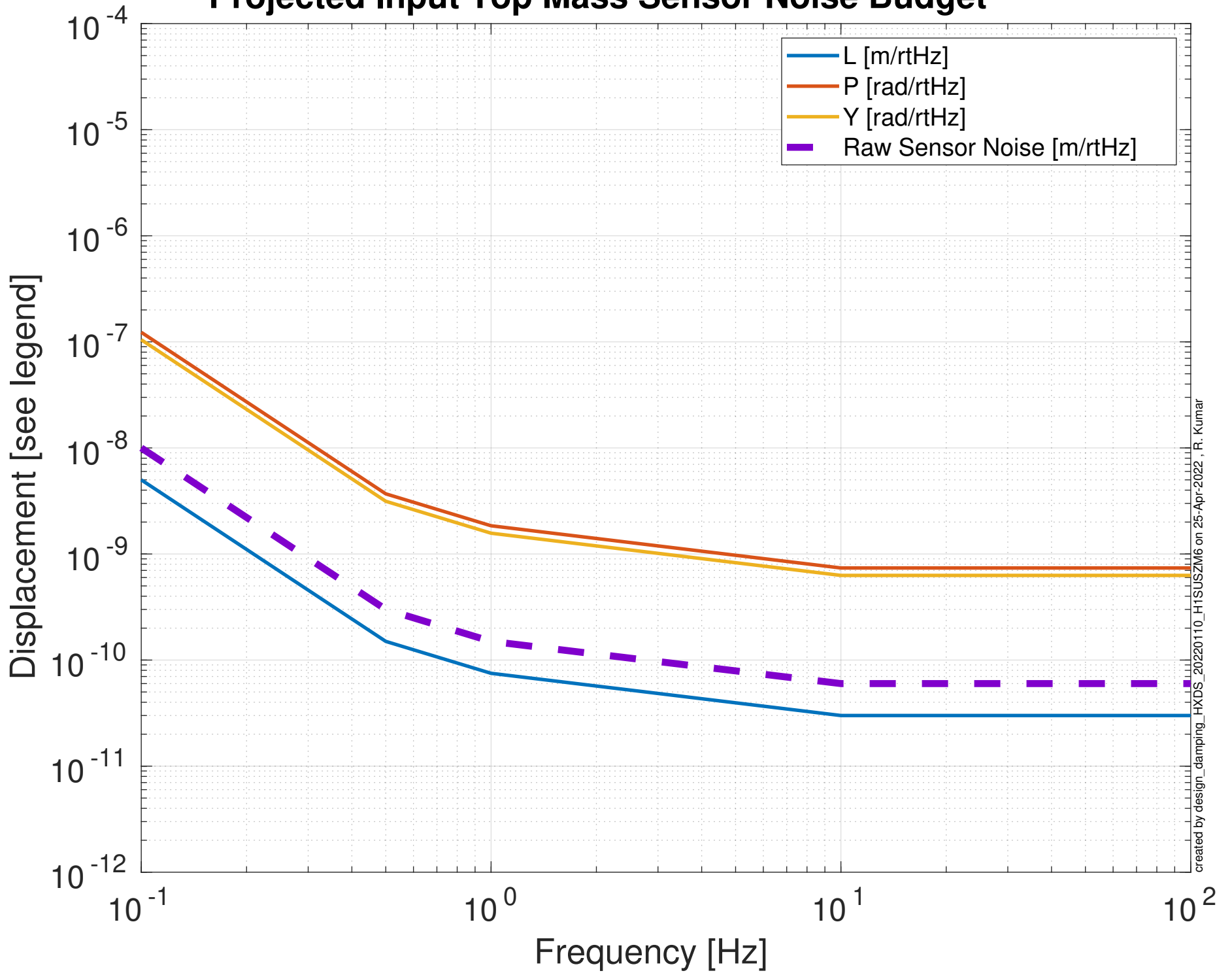
created by design_damping_HXDS_2020110_H1SUSZM6 on 25-Apr-2022 . R. Kumar

Projected ISI Seismic Noise Budget H1:SUS-ZM6, Y Sus. Point Displacement



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Projected Input Top Mass Sensor Noise Budget



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