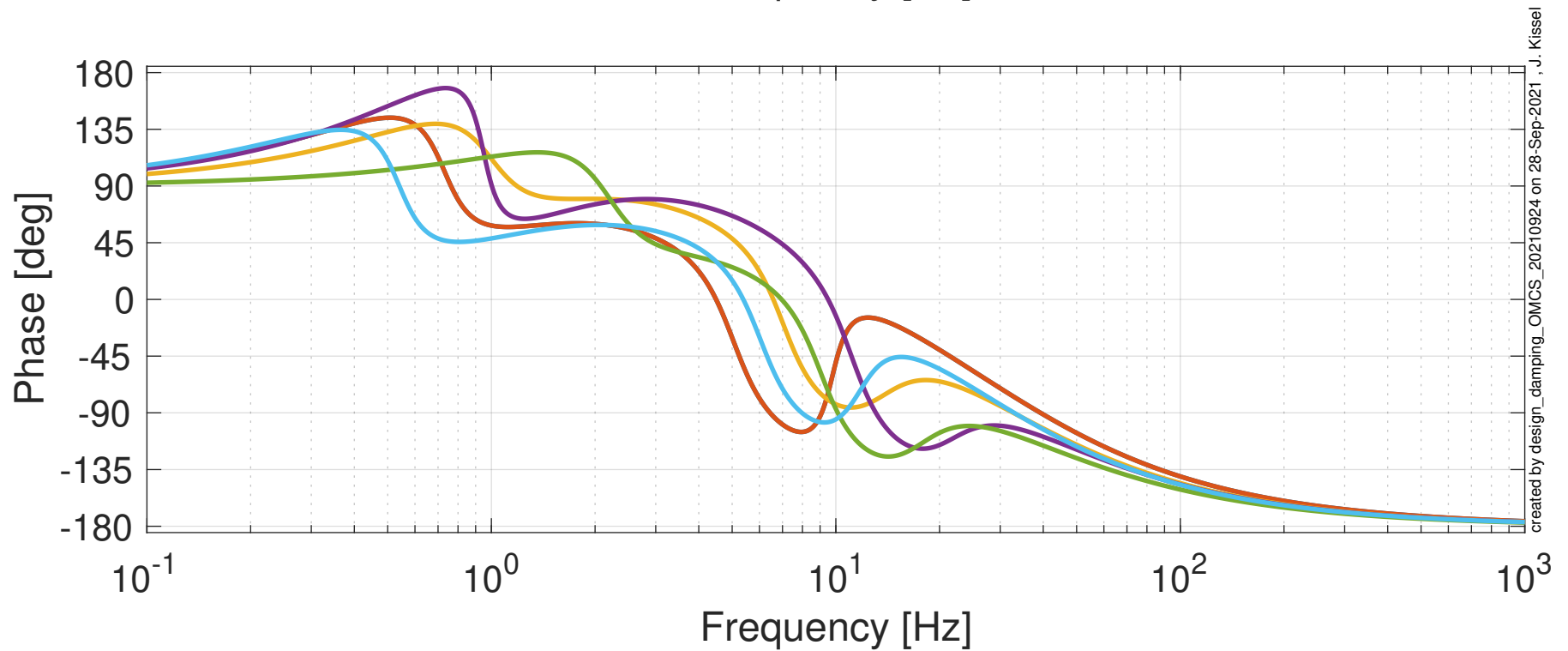
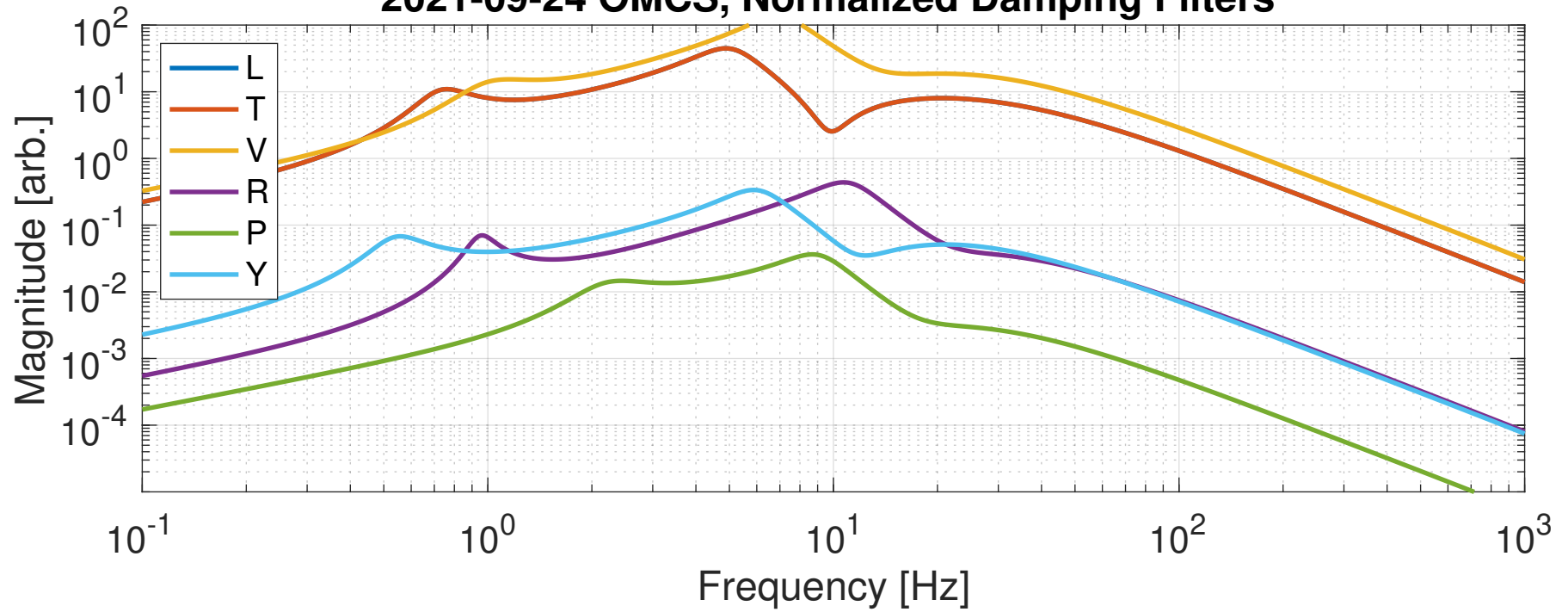


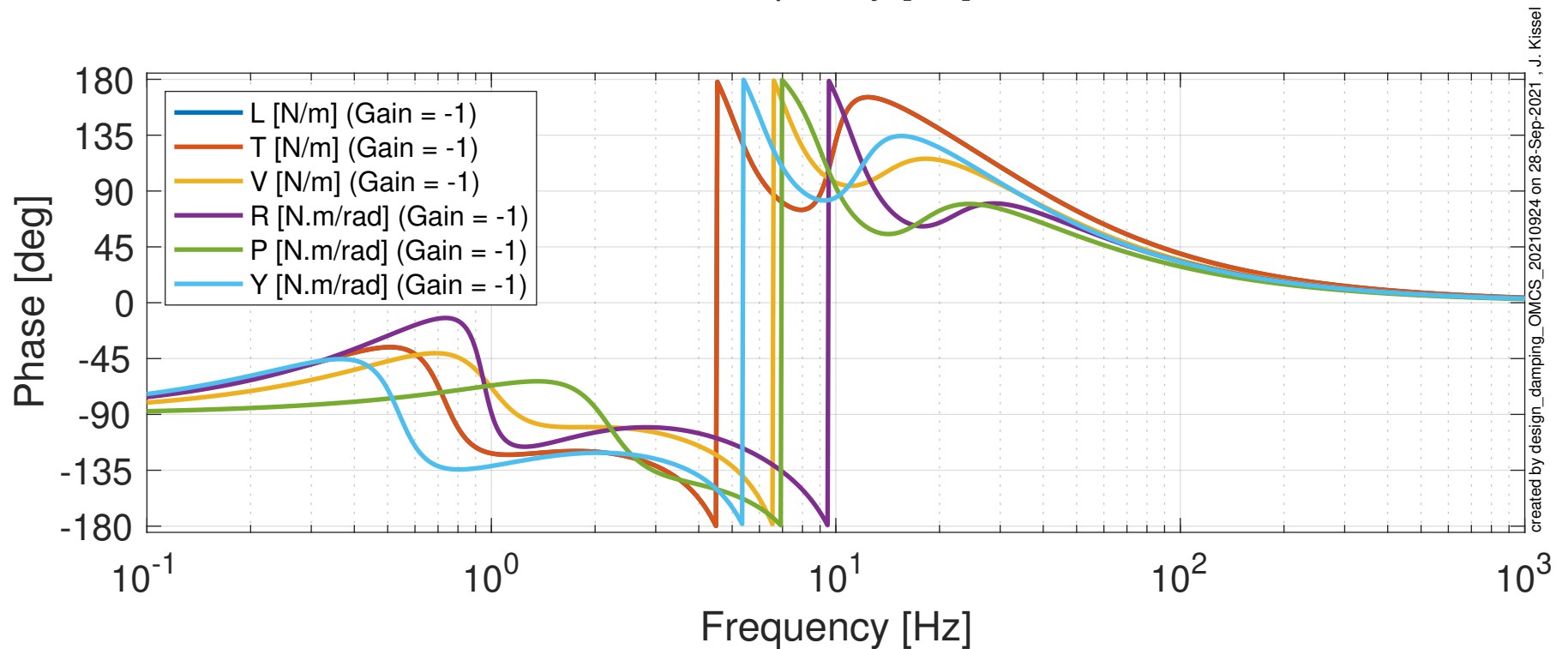
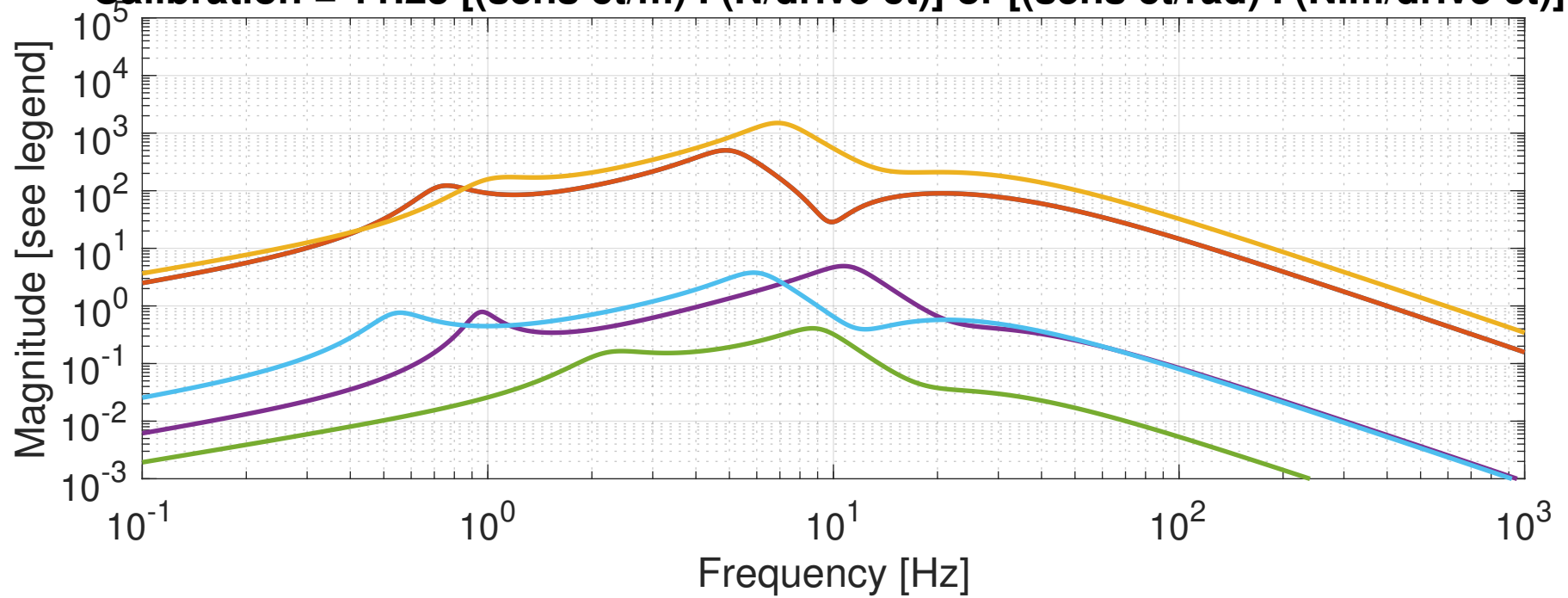
2021-09-24 OMCS, Normalized Damping Filters



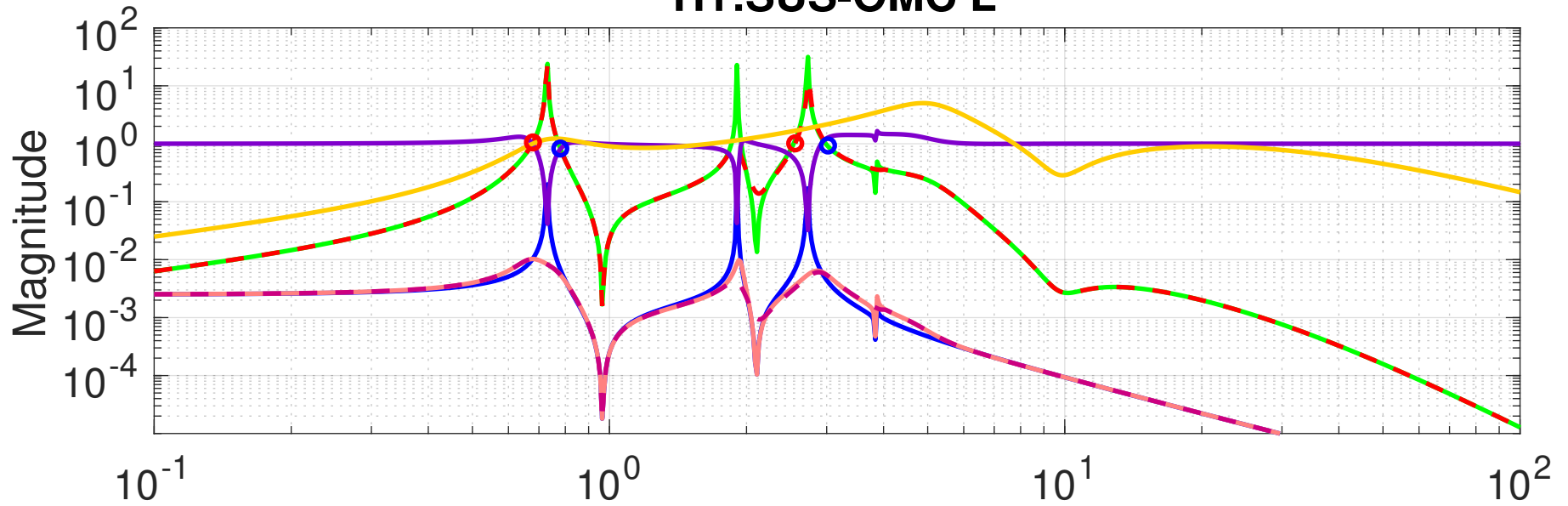
created by design_damping_OMCS_20210924 on 28-Sep-2021, J. Kissel

2021-09-24 OMCS, Calibrated Damping Filters

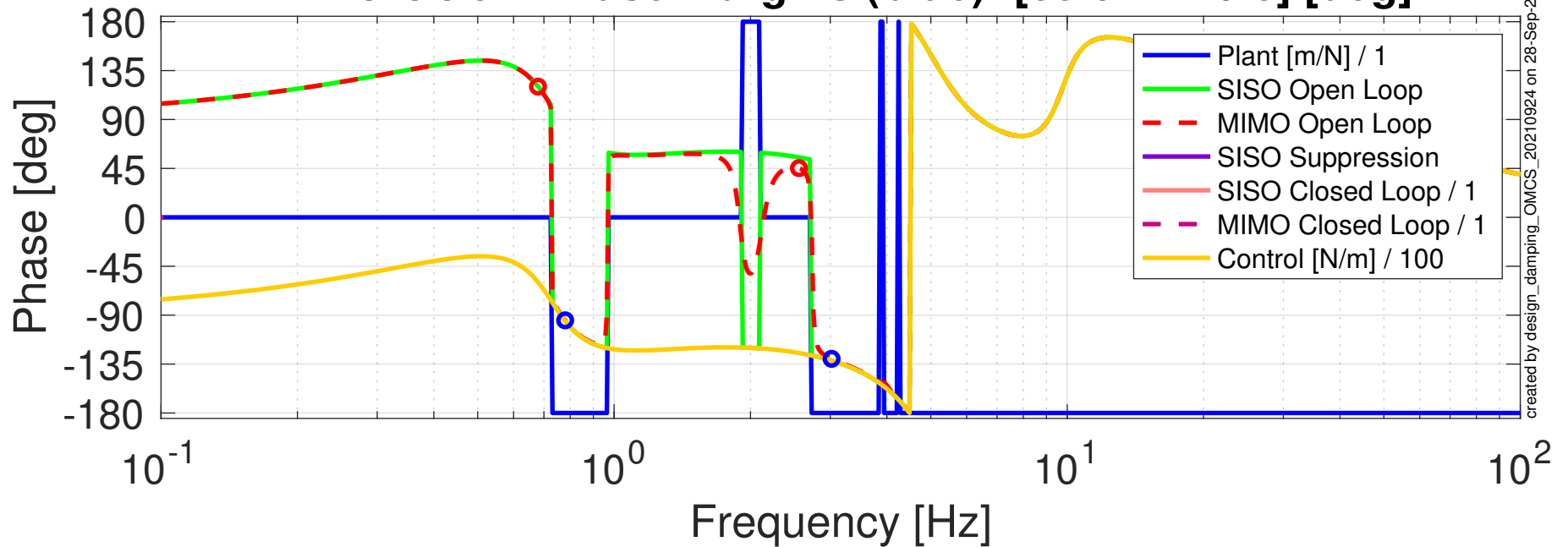
Calibration = 11.23 [(sens ct/m) . (N/drive ct)] or [(sens ct/rad) . (N.m/drive ct)]



Damping Loop Design H1:SUS-OMC L

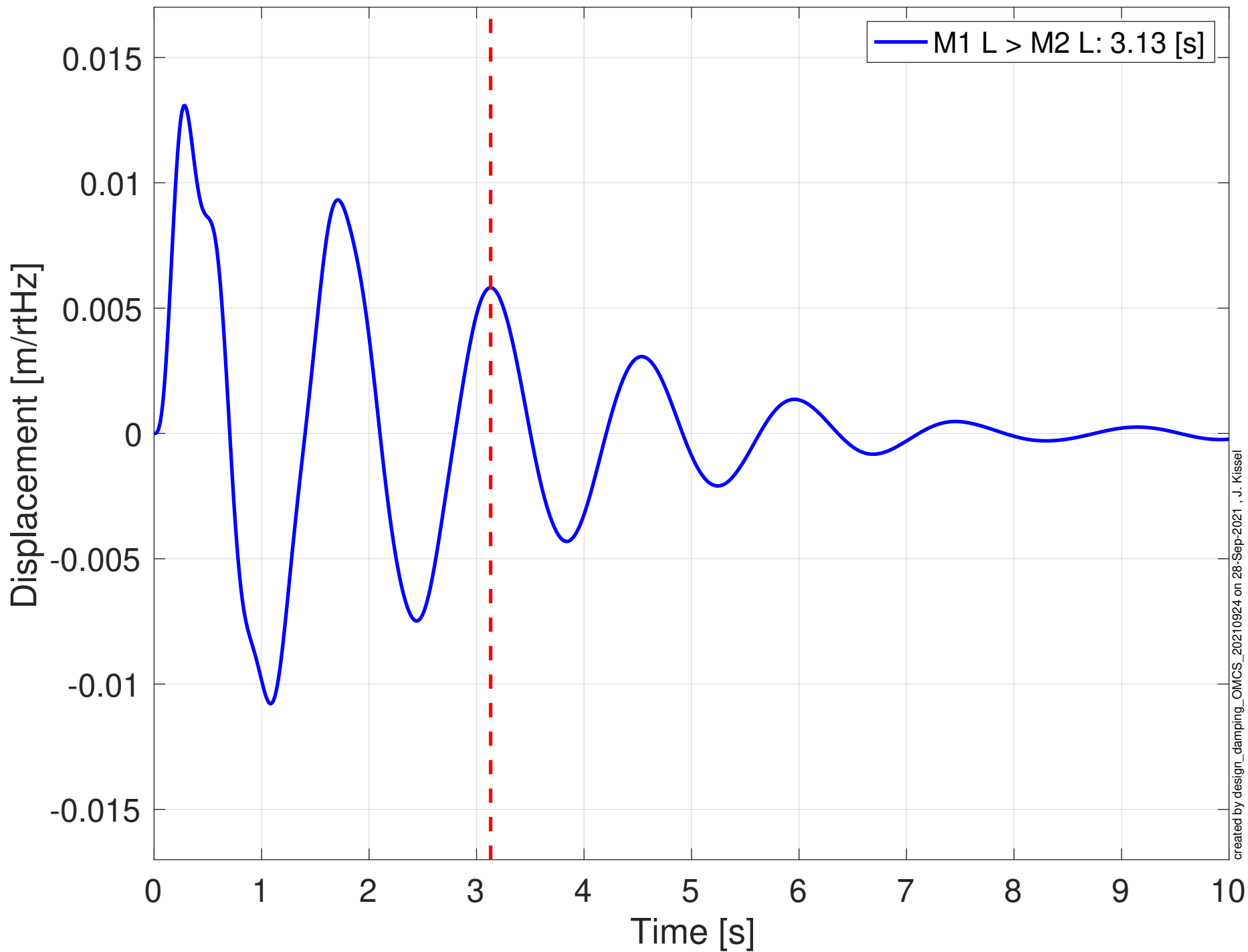


MIMO LUGF Phase Margins (red): [59.7 135] [deg]
MIMO UUGF Phase Margins (blue): [85.3 49.8] [deg]

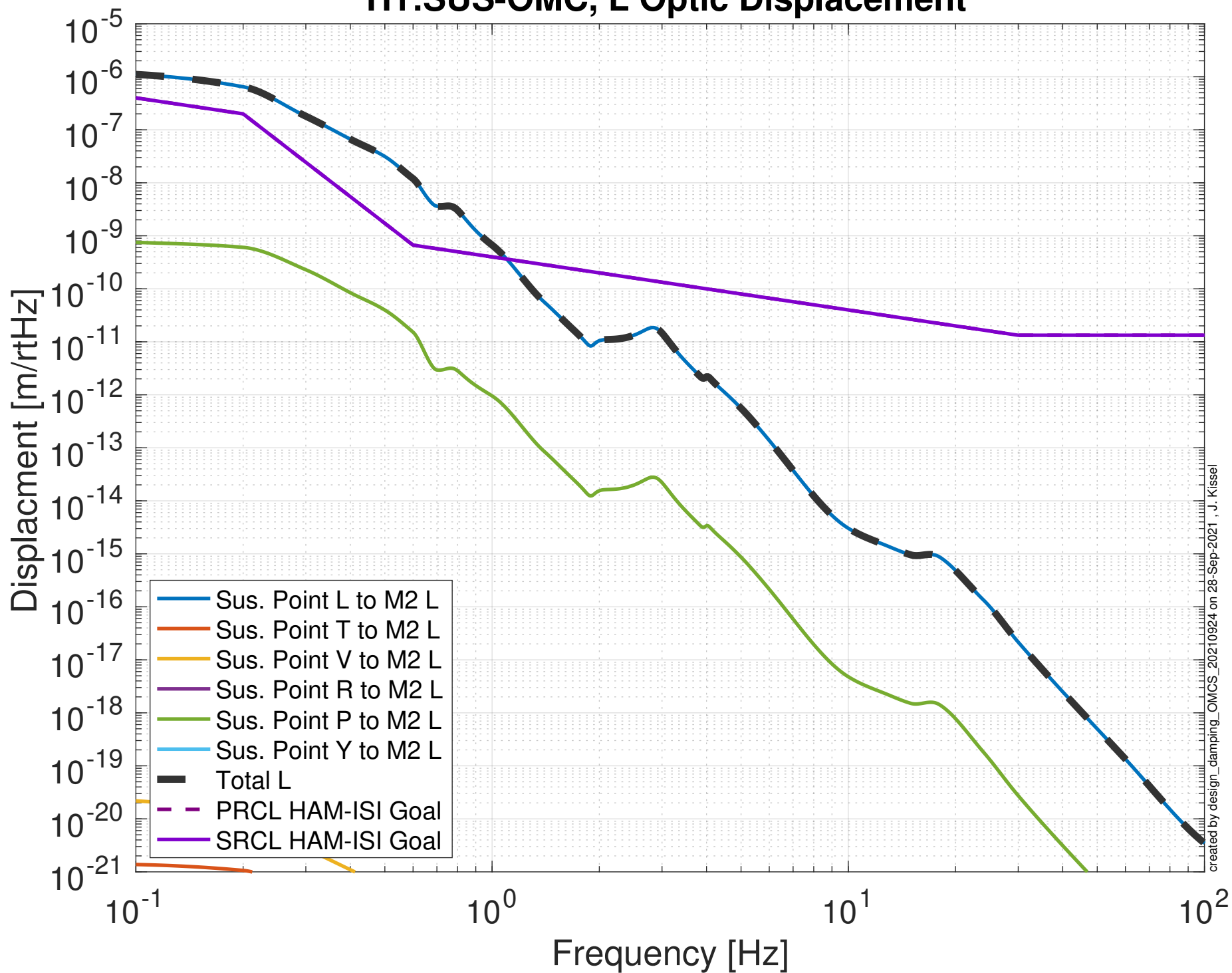


Damped Impulse Response

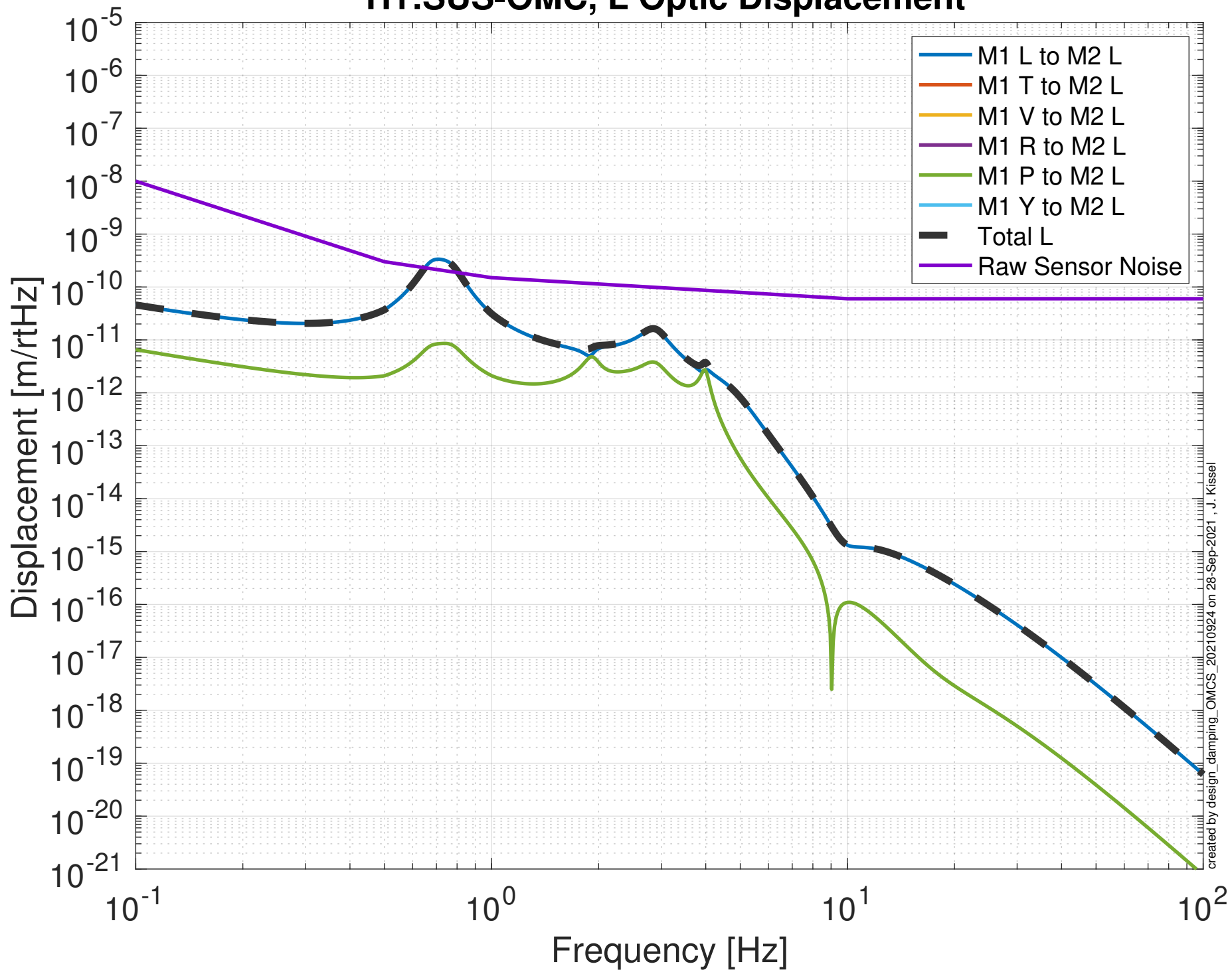
H1:SUS-OMC L



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

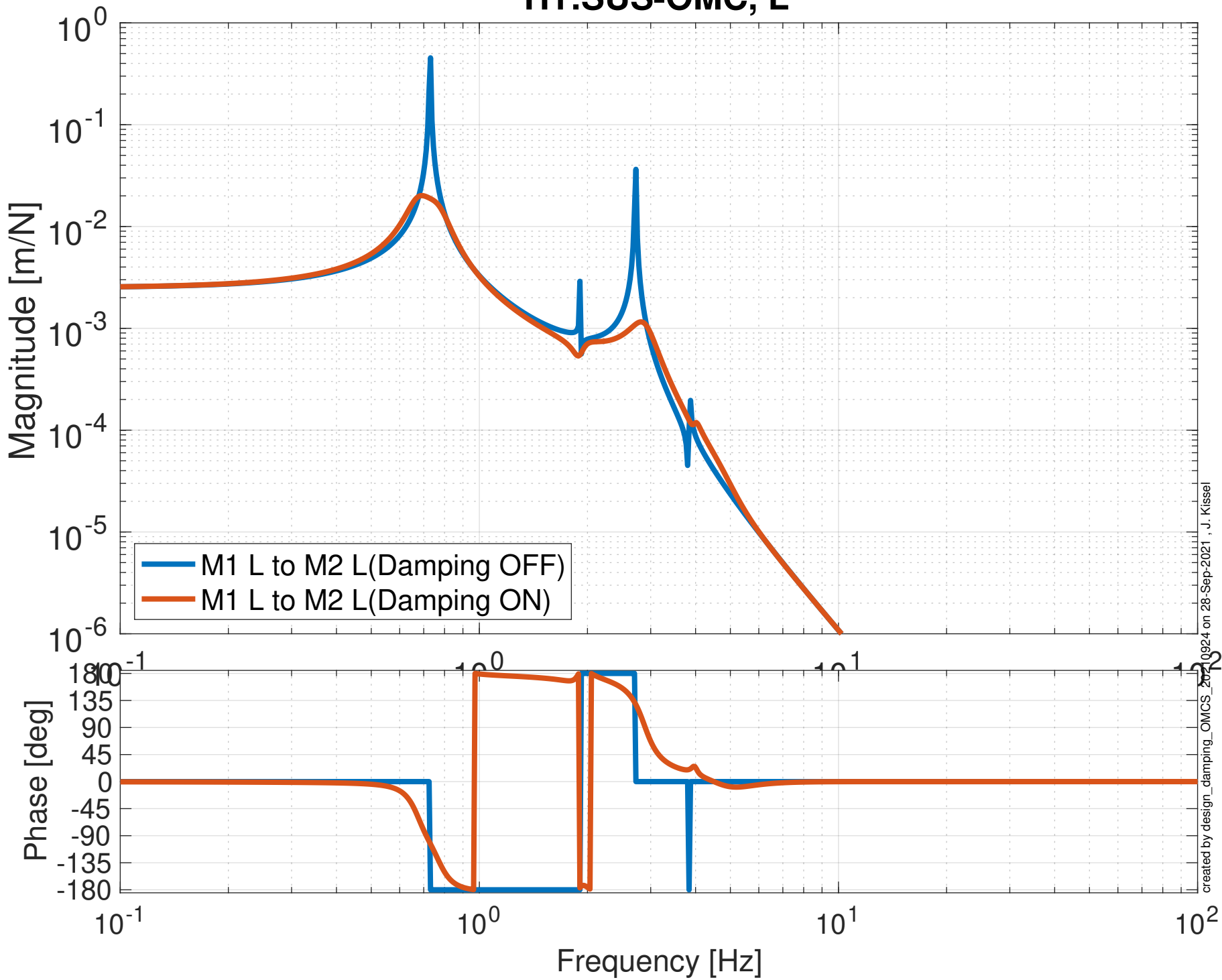


Projected Top Mass Sensor > Optic Noise Budget H1:SUS-OMC, L Optic Displacement



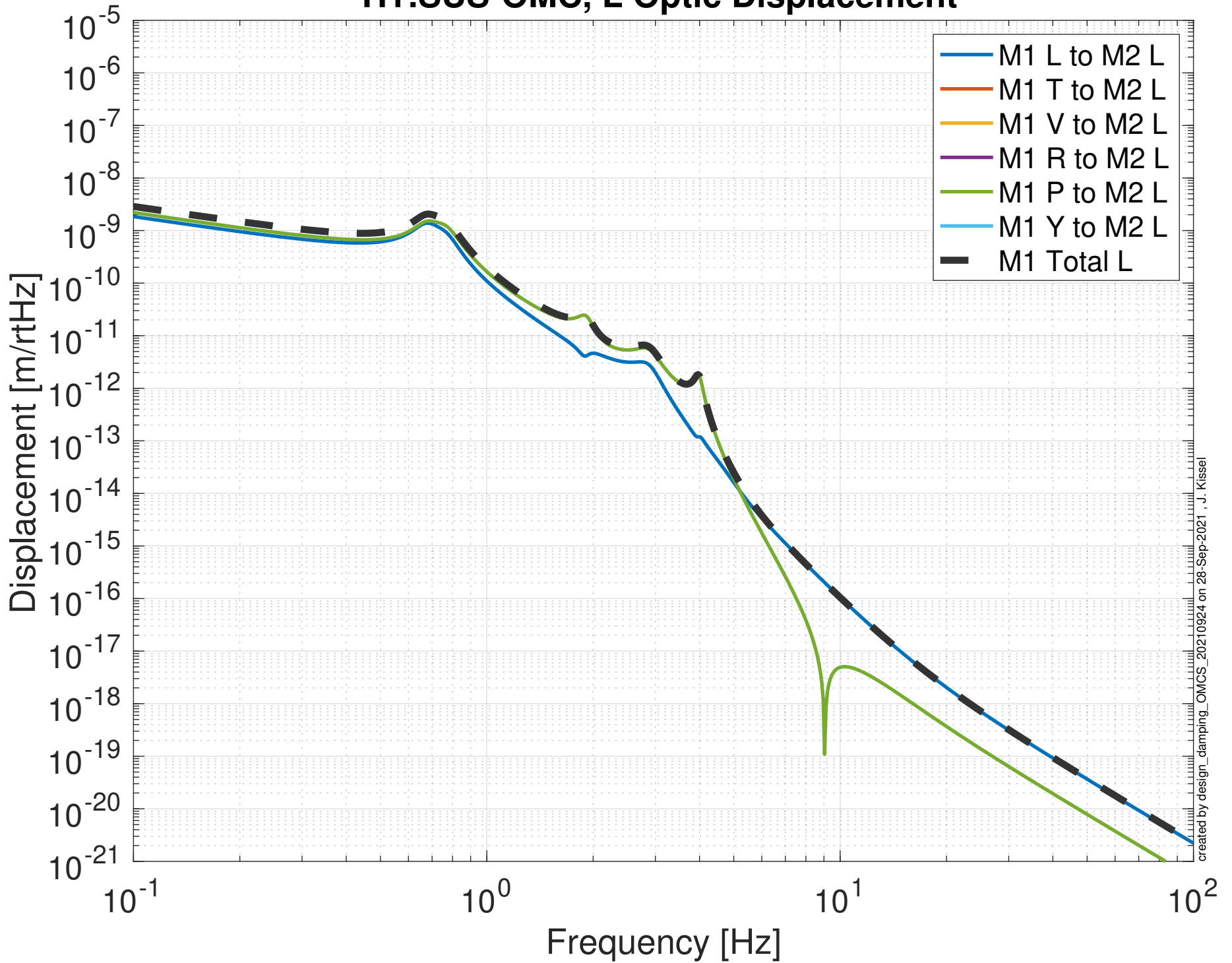
Global Control Transfer Functions to Optic

H1:SUS-OMC, L



Projected M1 Mass Actuator > Optic Noise Budget

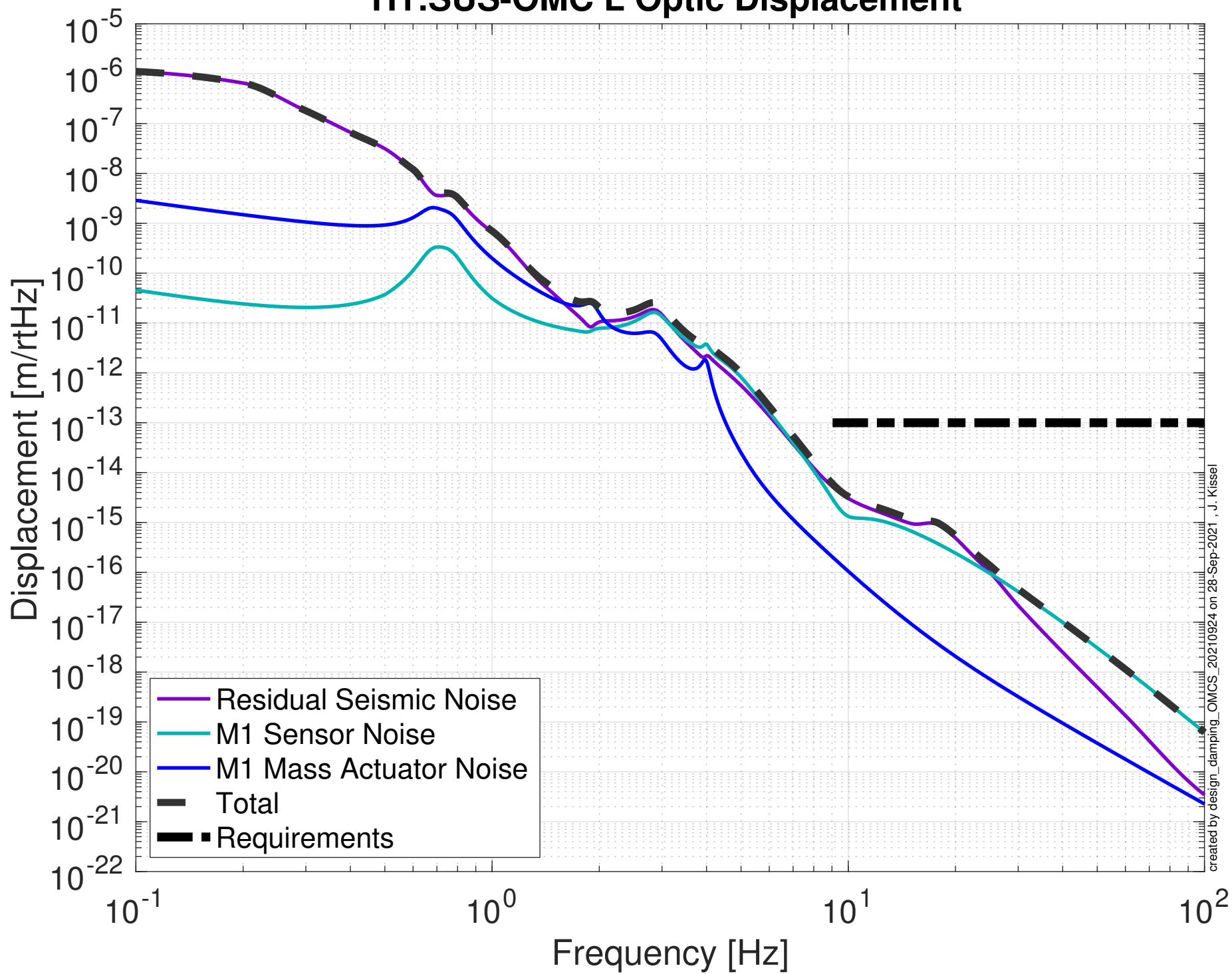
H1:SUS-OMC, L Optic Displacement



created by design_damping_OMCS_20210924 on 28-Sep-2021, J. Kissel

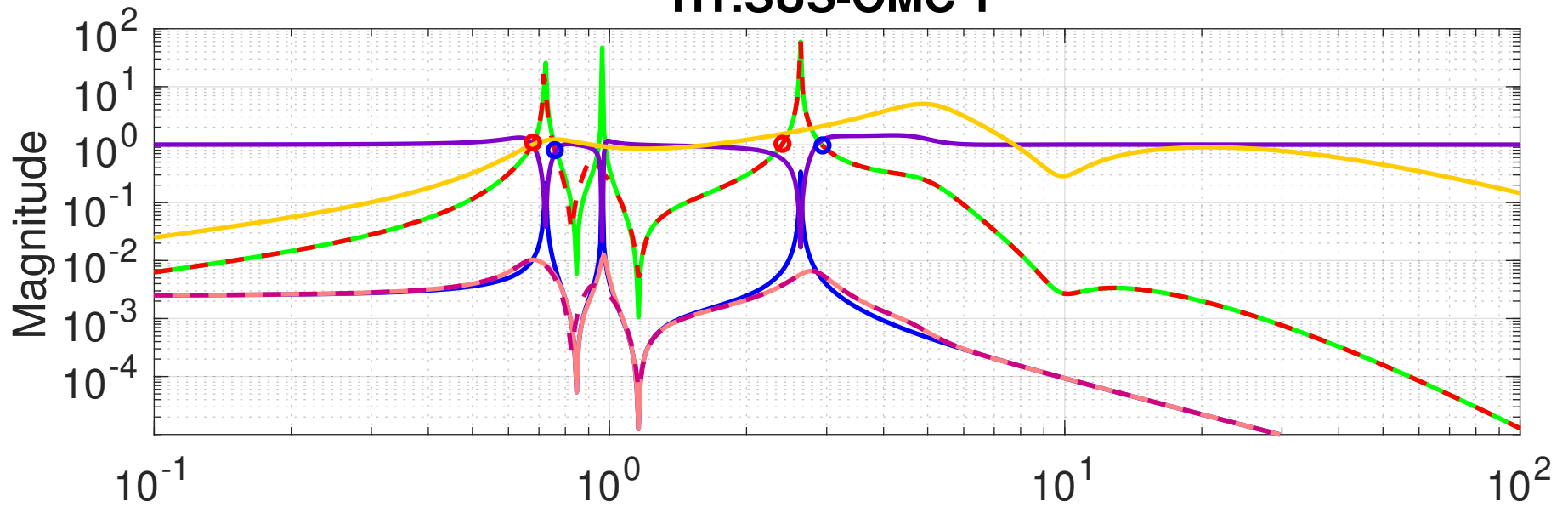
Damping Loop Performance

H1:SUS-OMC L Optic Displacement

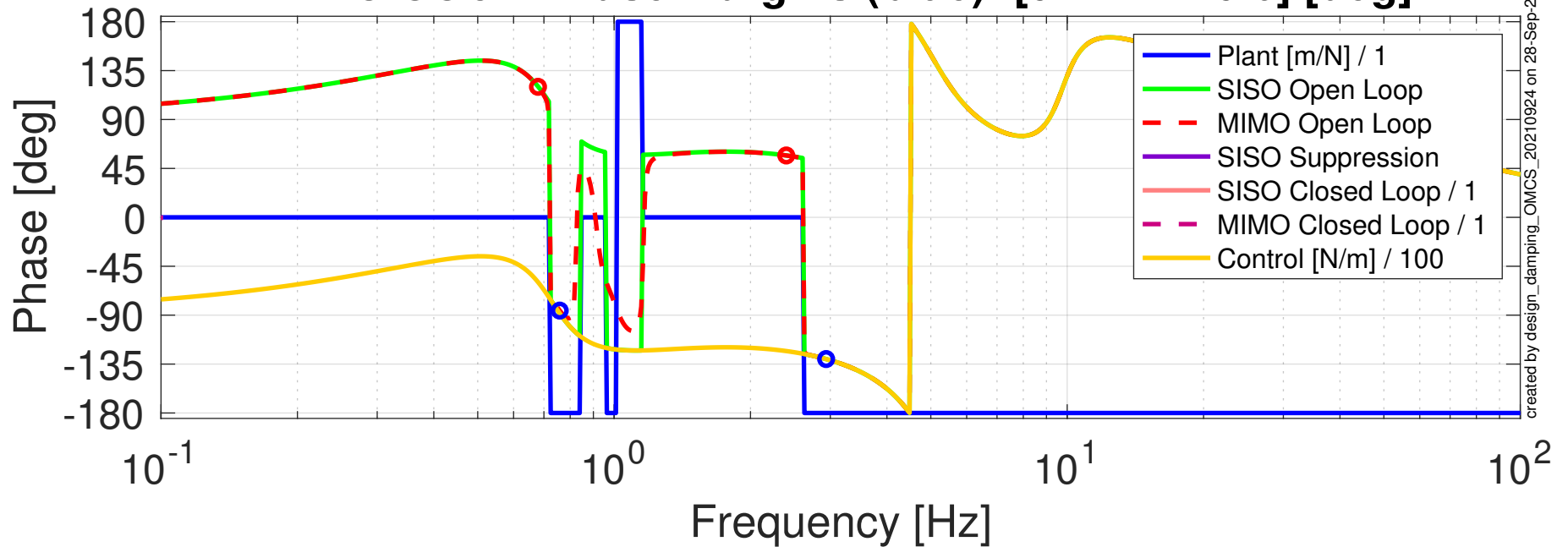


Damping Loop Design

H1:SUS-OMC T

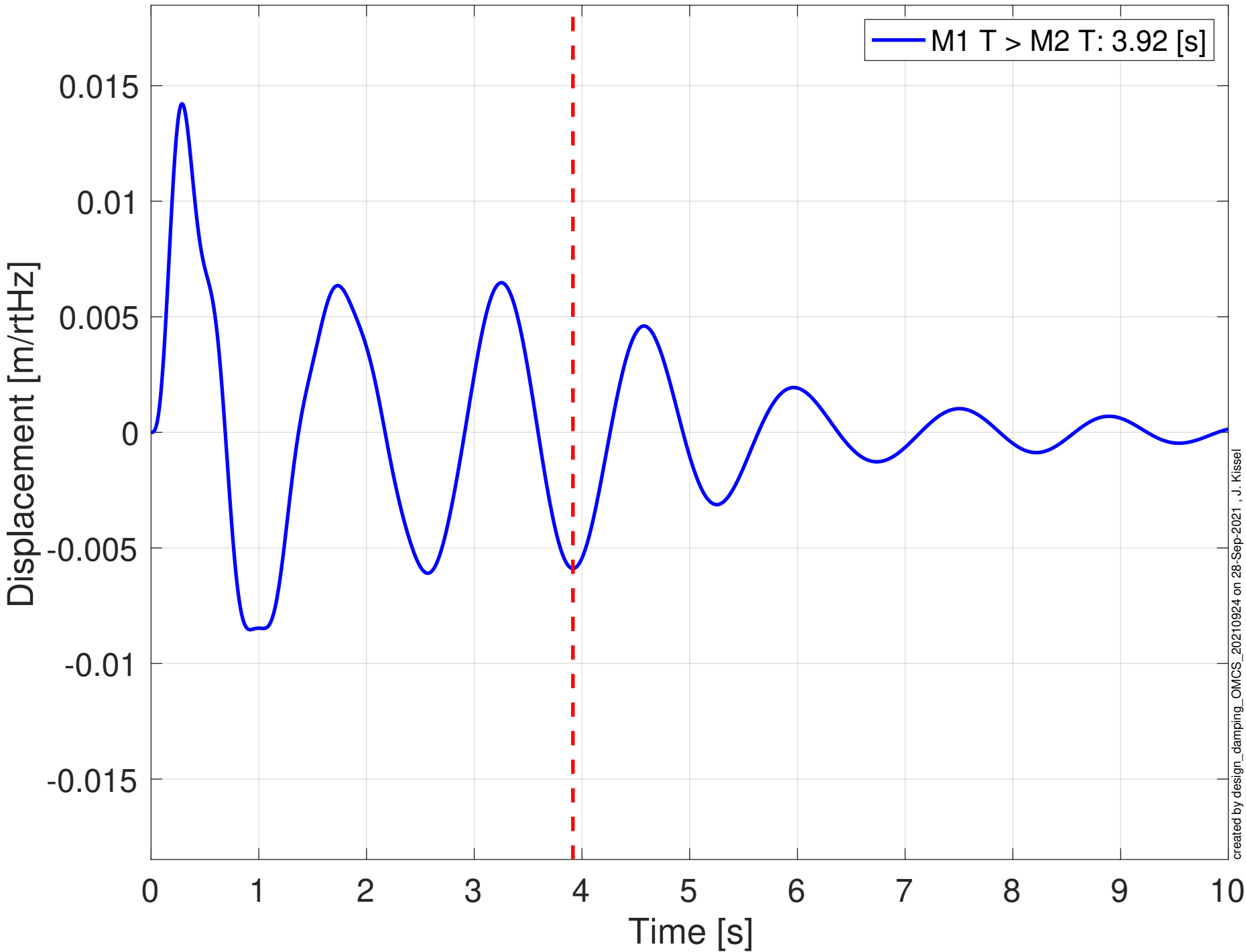


MIMO LUGF Phase Margins (red): [59.9 123] [deg]
MIMO UUGF Phase Margins (blue): [94.2 49.6] [deg]

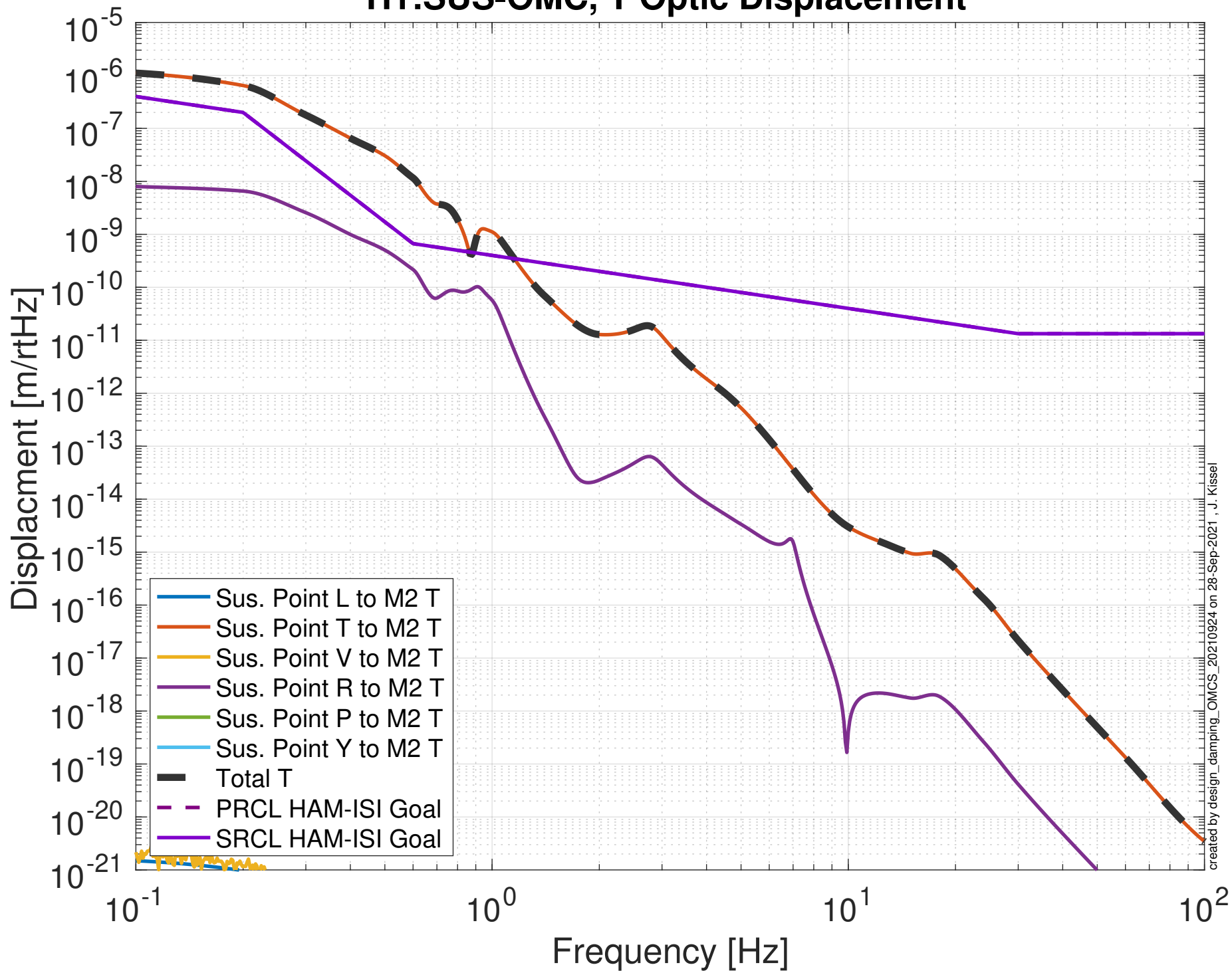


Damped Impulse Response

H1:SUS-OMC T

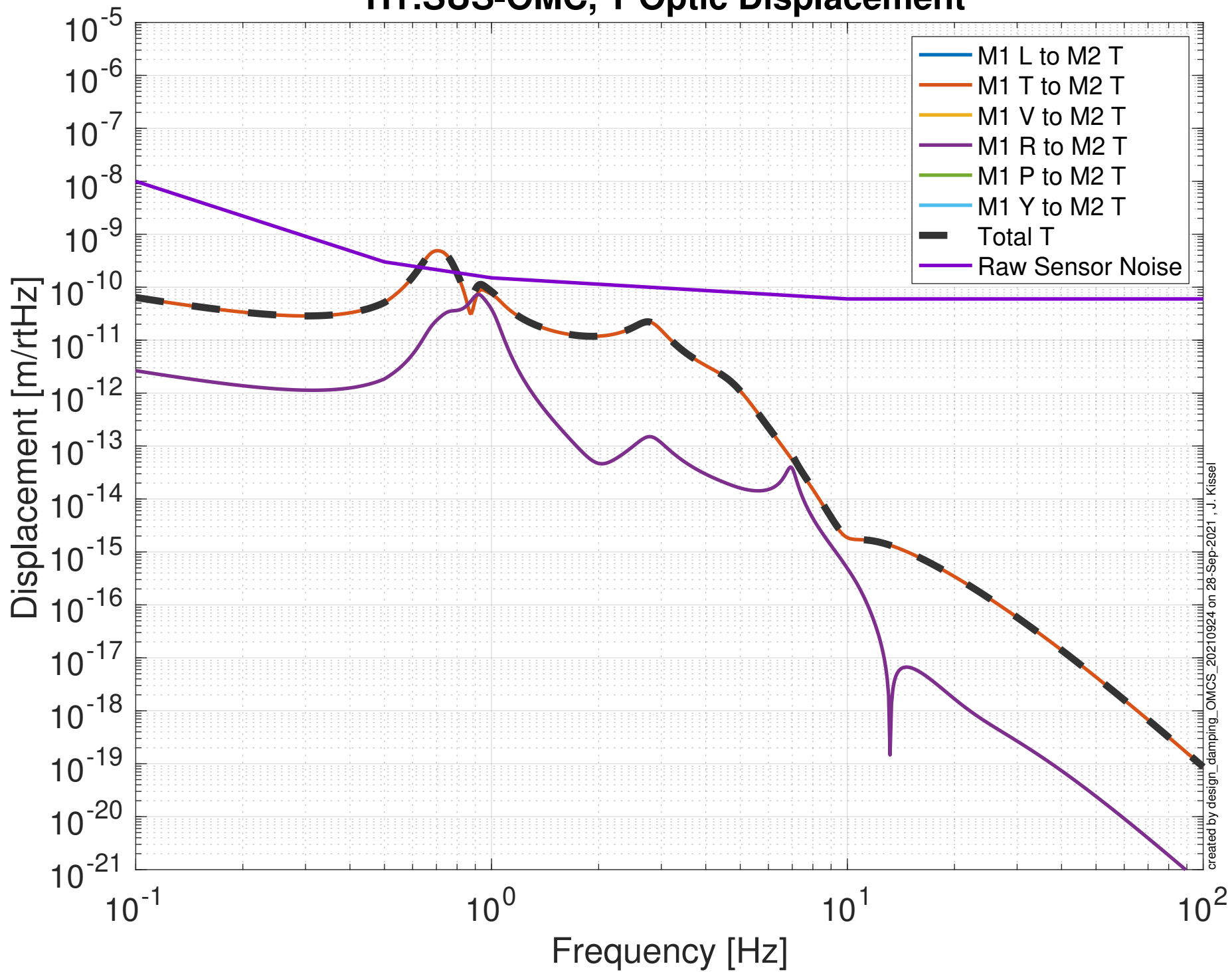


Projected Sus. Point > Optic Seismic Noise Budget H1:SUS-OMC, T Optic Displacement

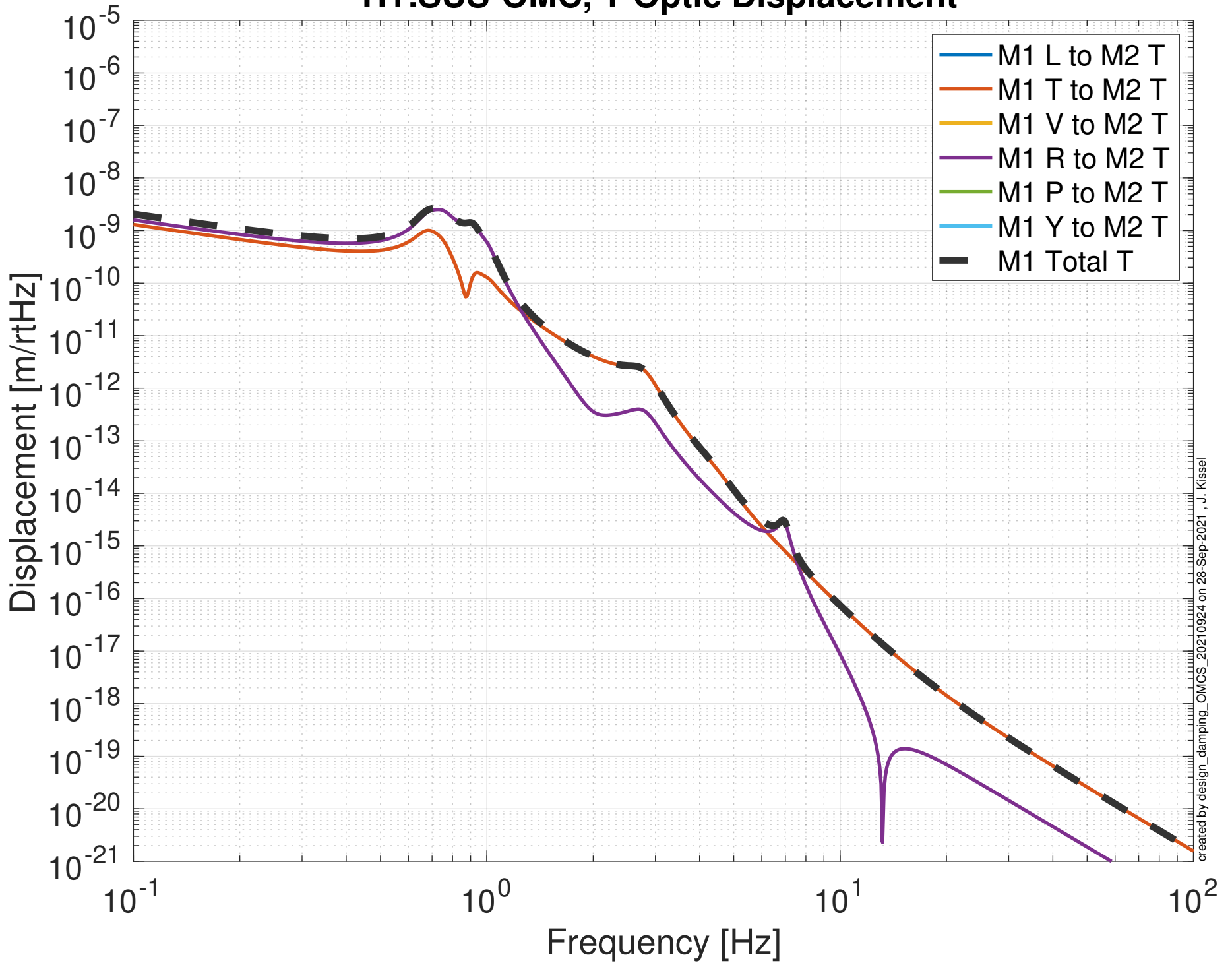


created by design_damping_OMCS_20210924 on 28-Sep-2021, J. Kissel

Projected Top Mass Sensor > Optic Noise Budget H1:SUS-OMC, T Optic Displacement



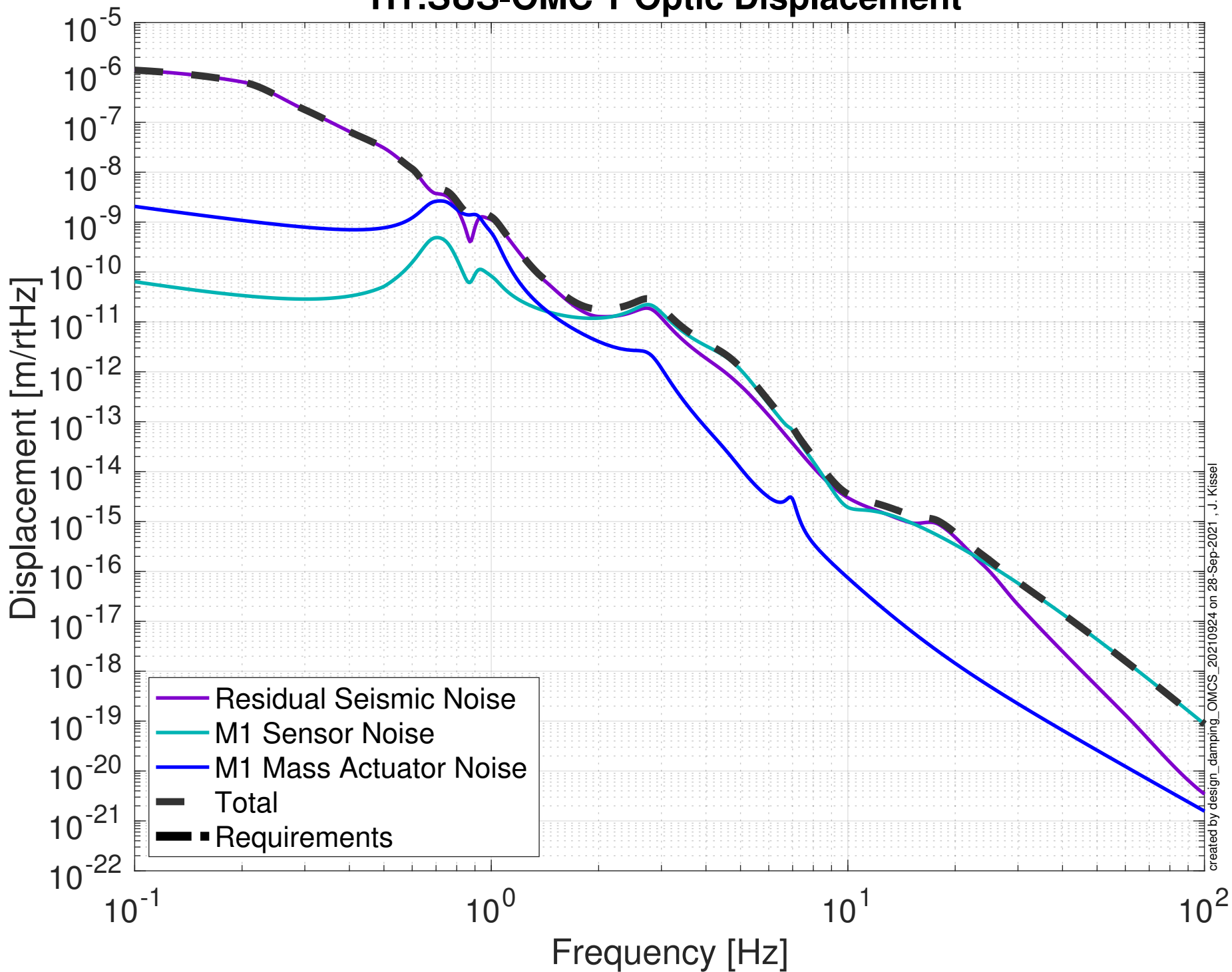
Projected M1 Mass Actuator > Optic Noise Budget H1:SUS-OMC, T Optic Displacement



created by design_damping_OMCS_20210924 on 28-Sep-2021, J. Kisse

Damping Loop Performance

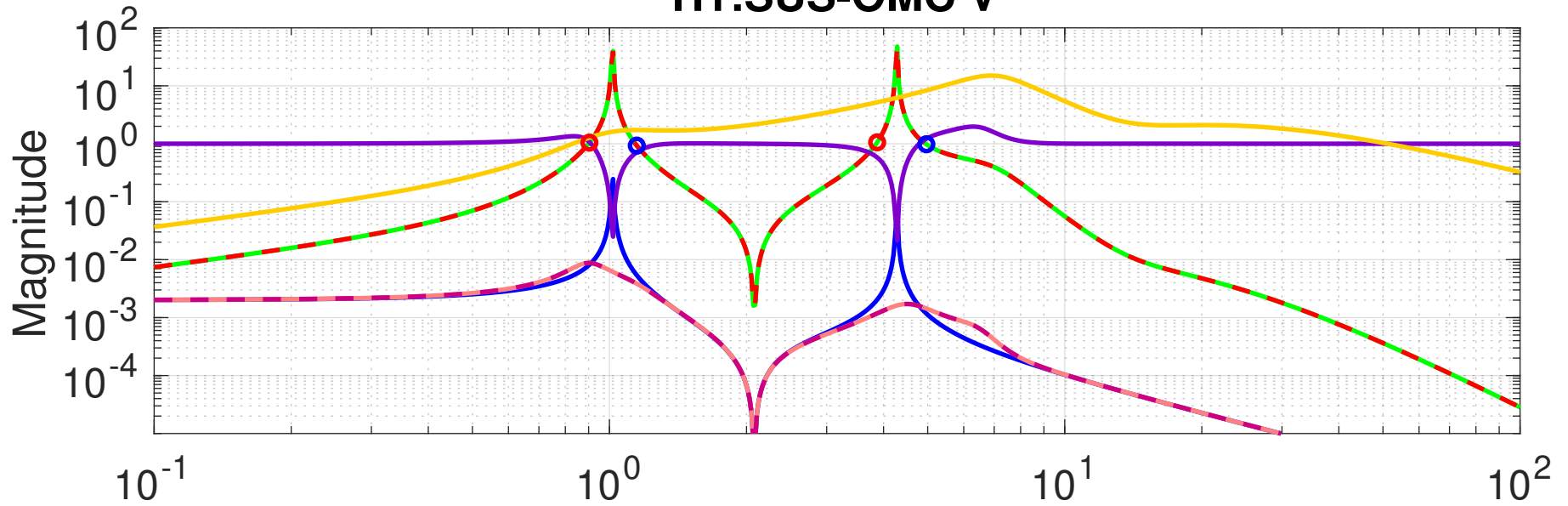
H1:SUS-OMC T Optic Displacement



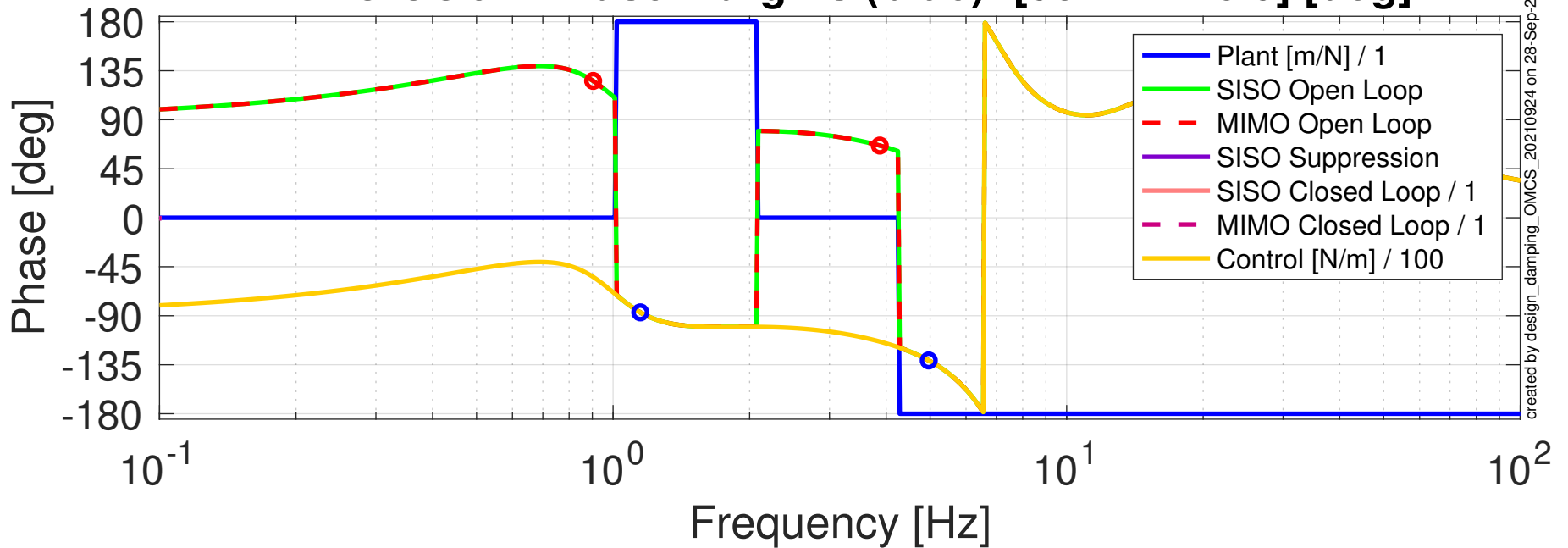
created by design_damping_OMCS_20210924 on 28-Sep-2021, J. Kissei

Damping Loop Design

H1:SUS-OMC V

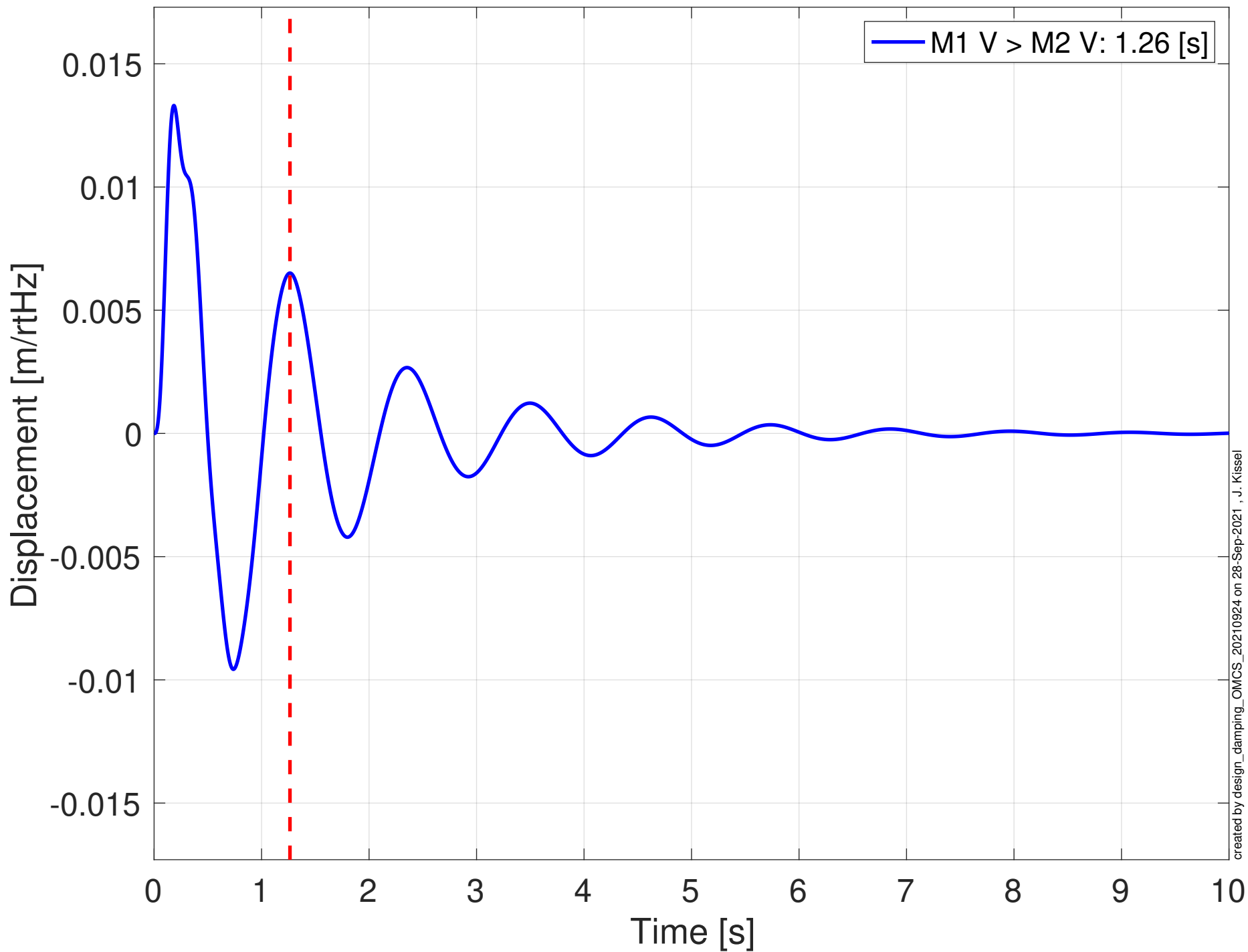


MIMO LUGF Phase Margins (red): [54.4 114] [deg]
MIMO UUGF Phase Margins (blue): [93.1 48.9] [deg]

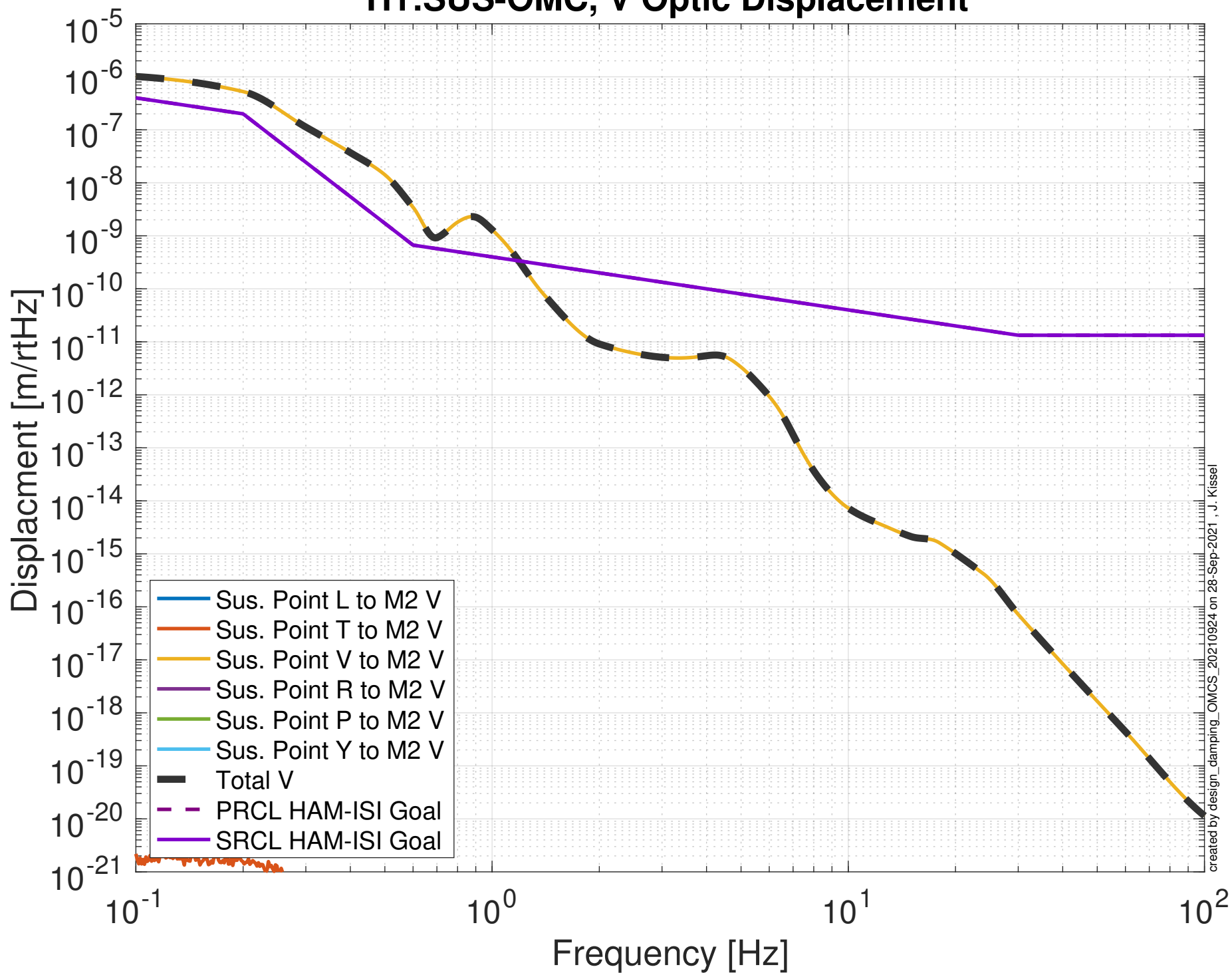


Damped Impulse Response

H1:SUS-OMC V



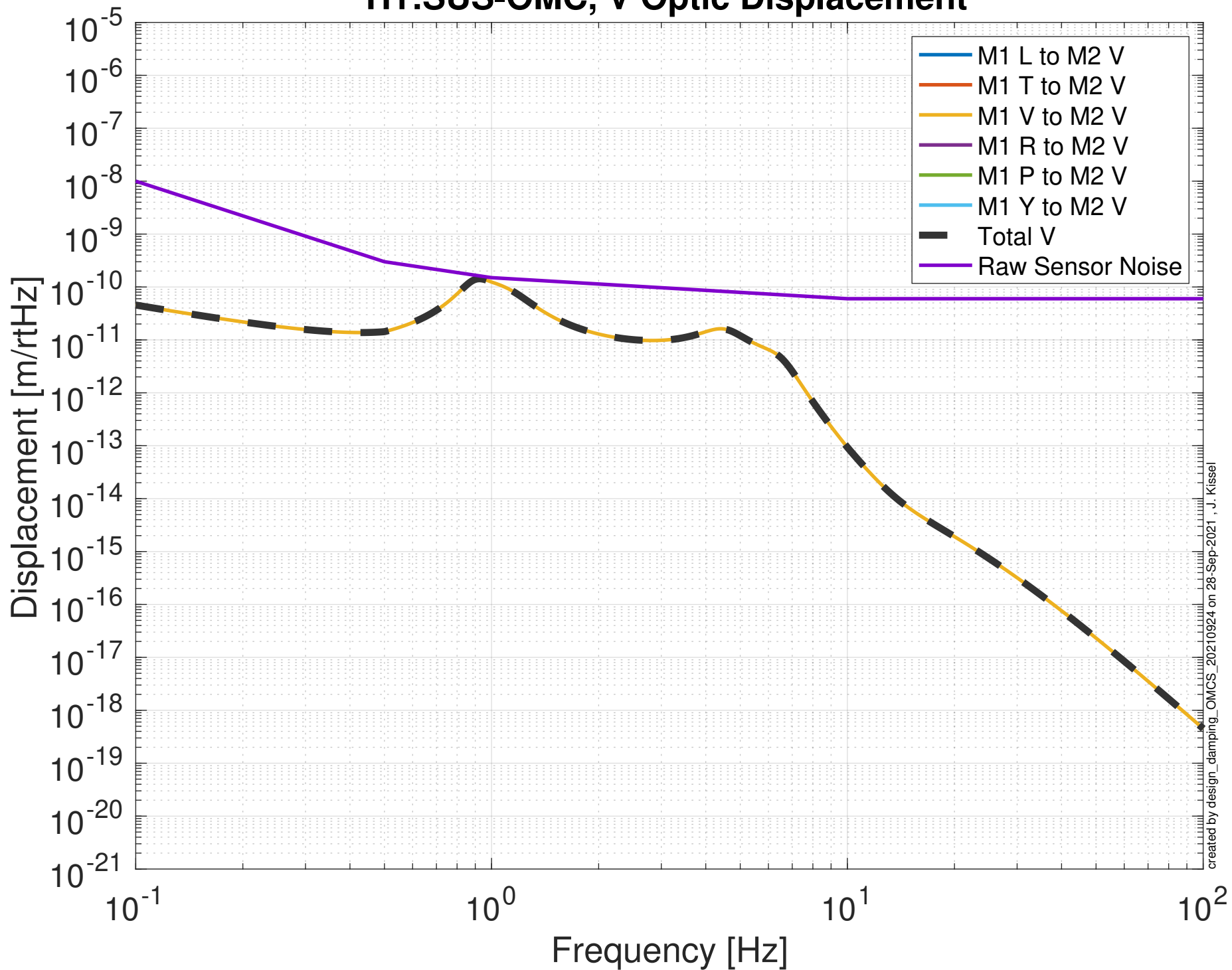
Projected Sus. Point > Optic Seismic Noise Budget H1:SUS-OMC, V Optic Displacement



created by design_damping_OMCS_20210924 on 28-Sep-2021, J. Kisse

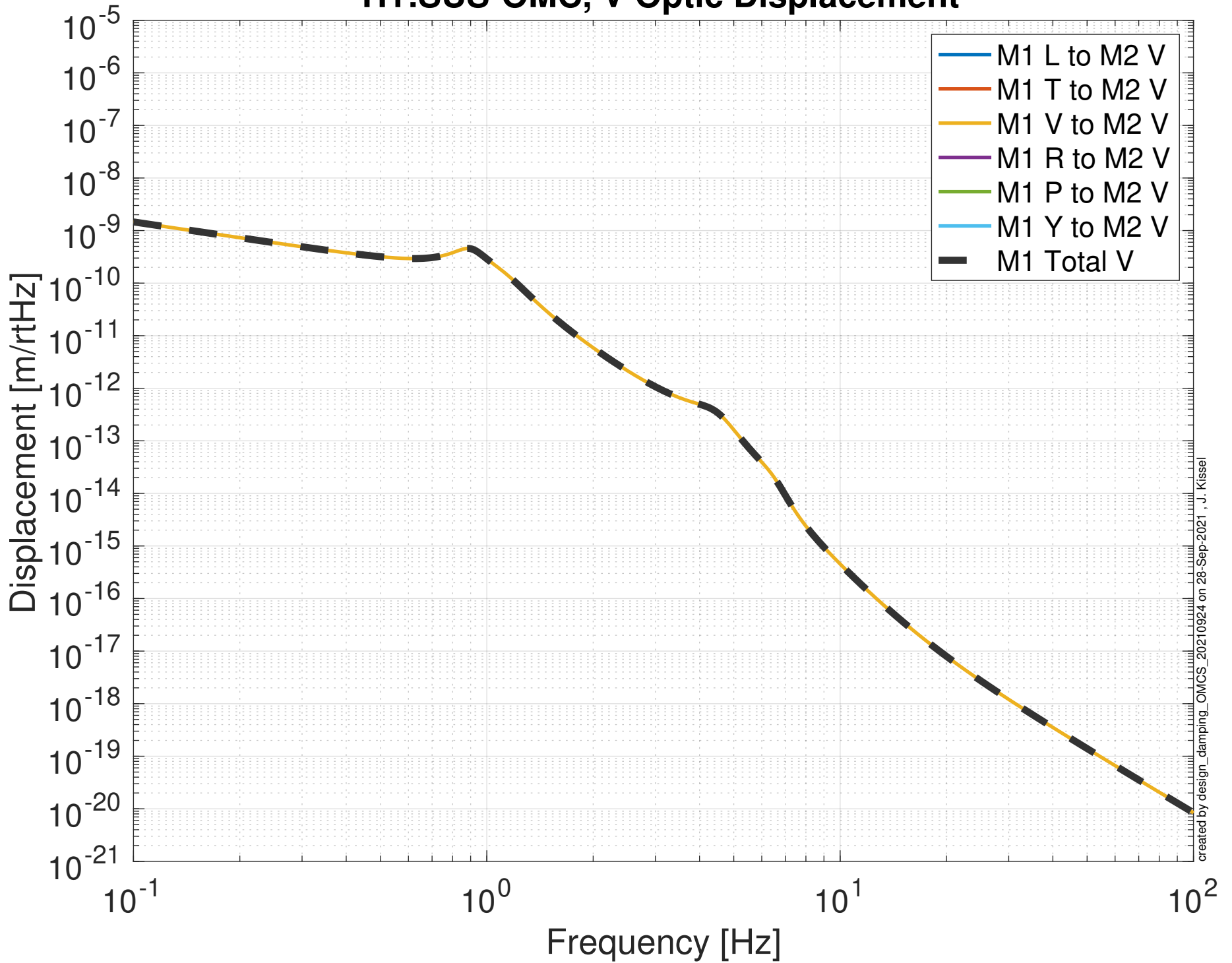
Projected Top Mass Sensor > Optic Noise Budget

H1:SUS-OMC, V Optic Displacement



Projected M1 Mass Actuator > Optic Noise Budget

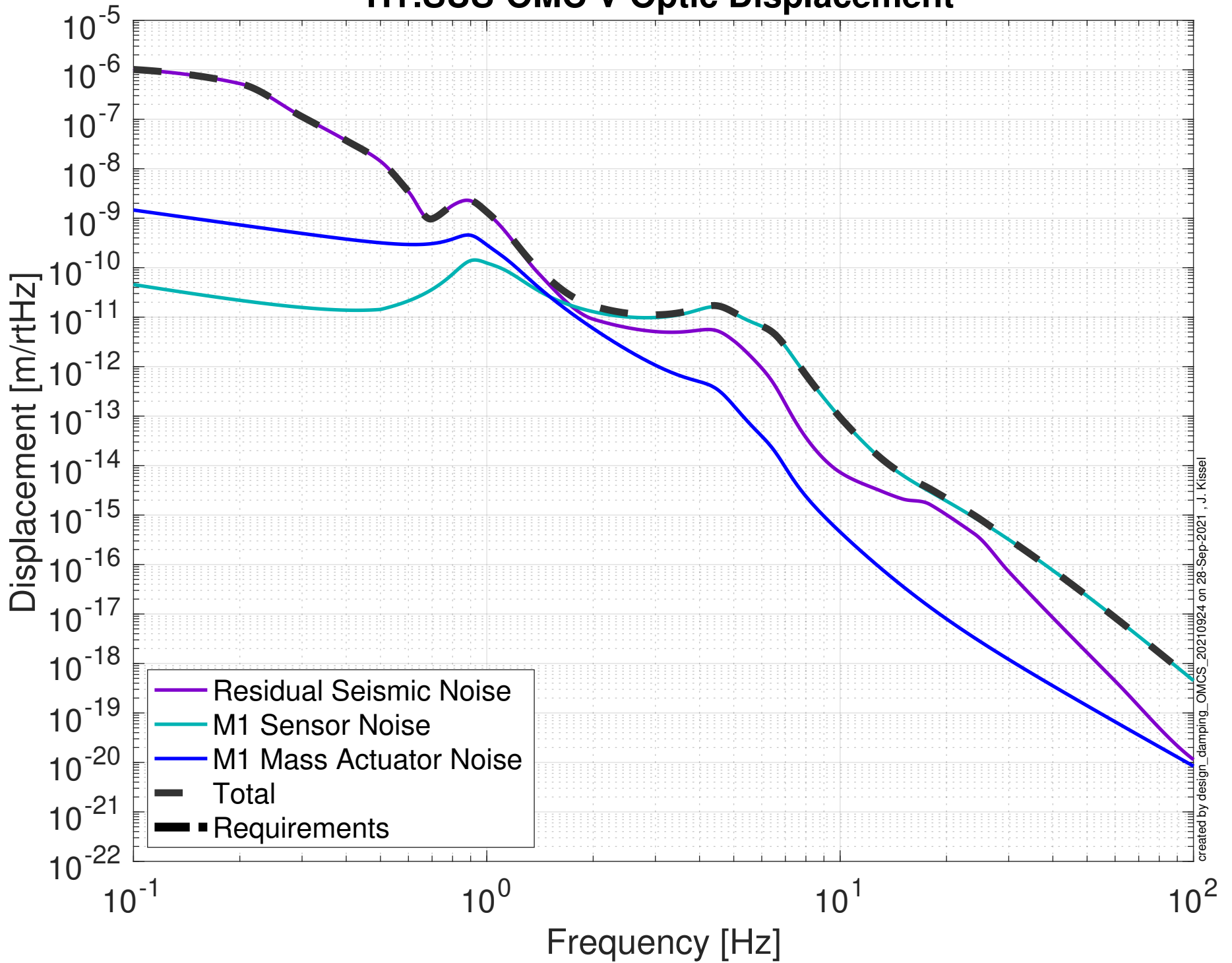
H1:SUS-OMC, V Optic Displacement



created by design_damping_OMCS_20210924 on 28-Sep-2021, J. Kisse

Damping Loop Performance

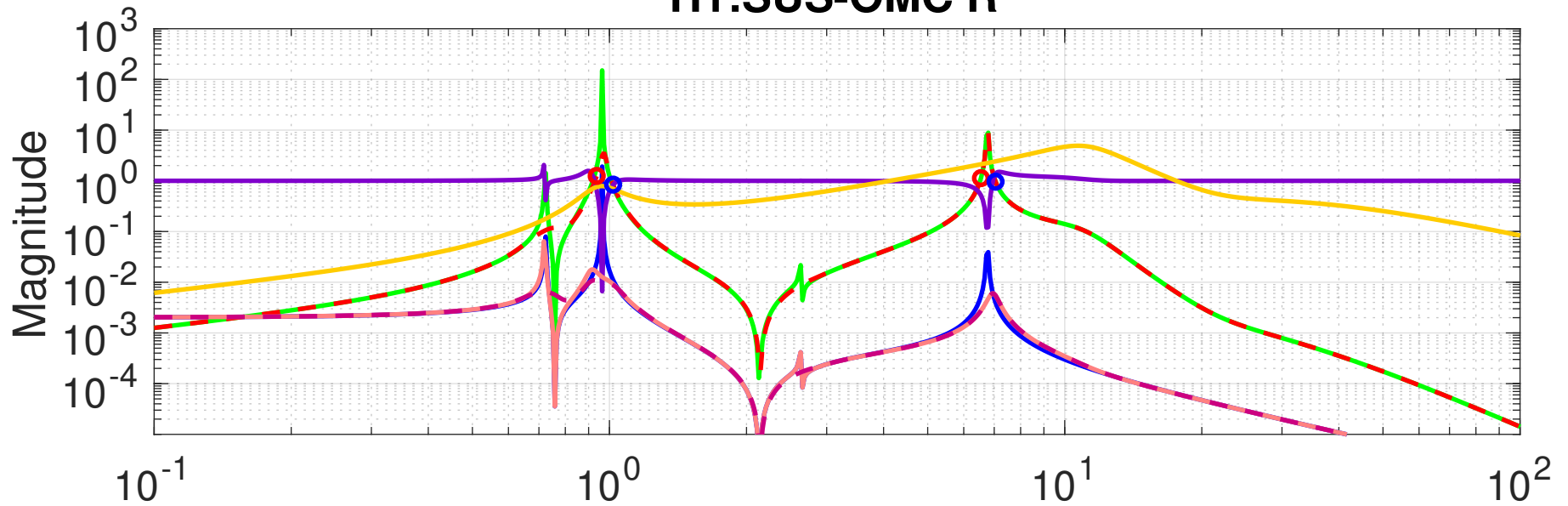
H1:SUS-OMC V Optic Displacement



created by design_damping_OMCS_20210924 on 28-Sep-2021, J. Kissei

Damping Loop Design

H1:SUS-OMC R

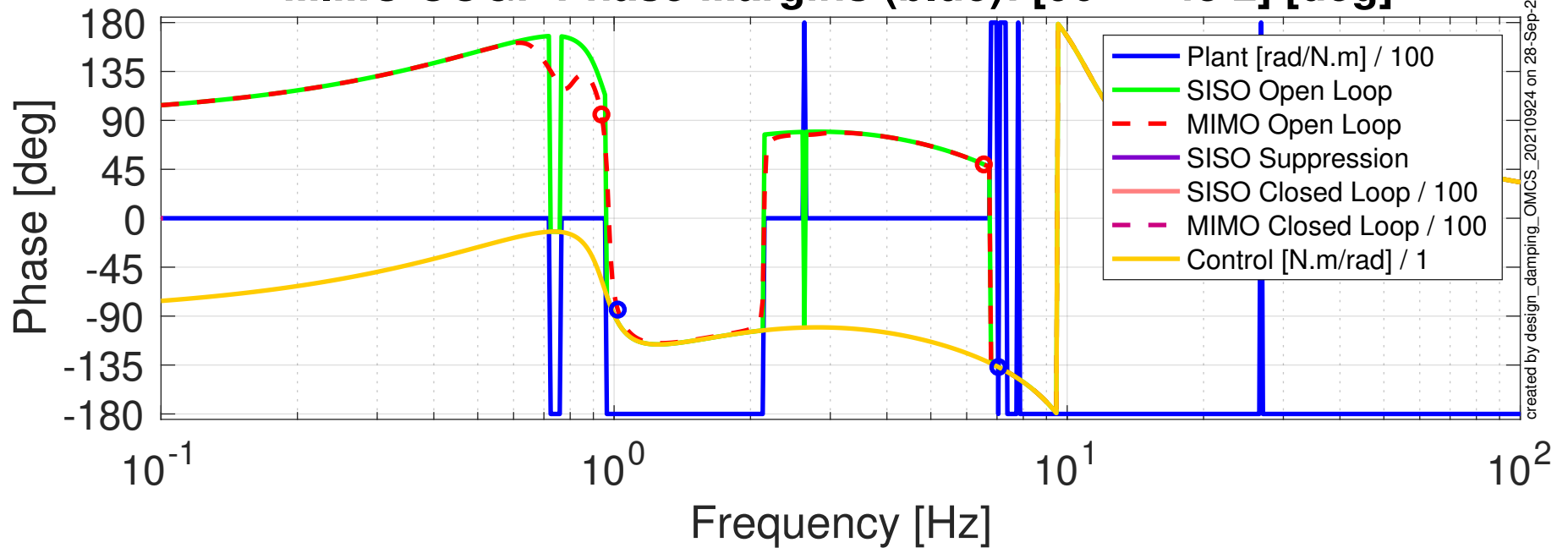


MIMO LUGF Phase Margins (red): [84.5

130] [deg]

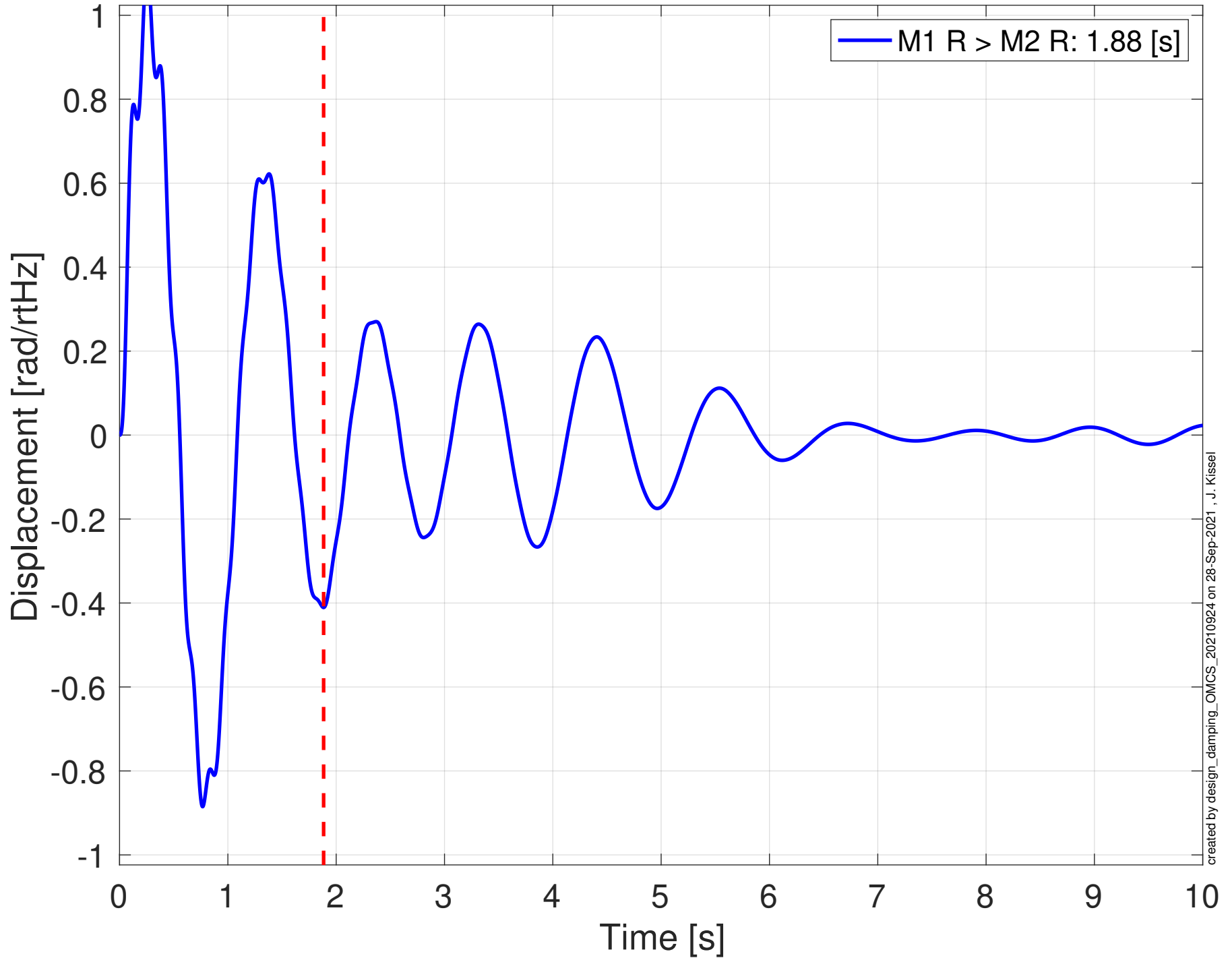
MIMO UUGF Phase Margins (blue): [96

43.2] [deg]

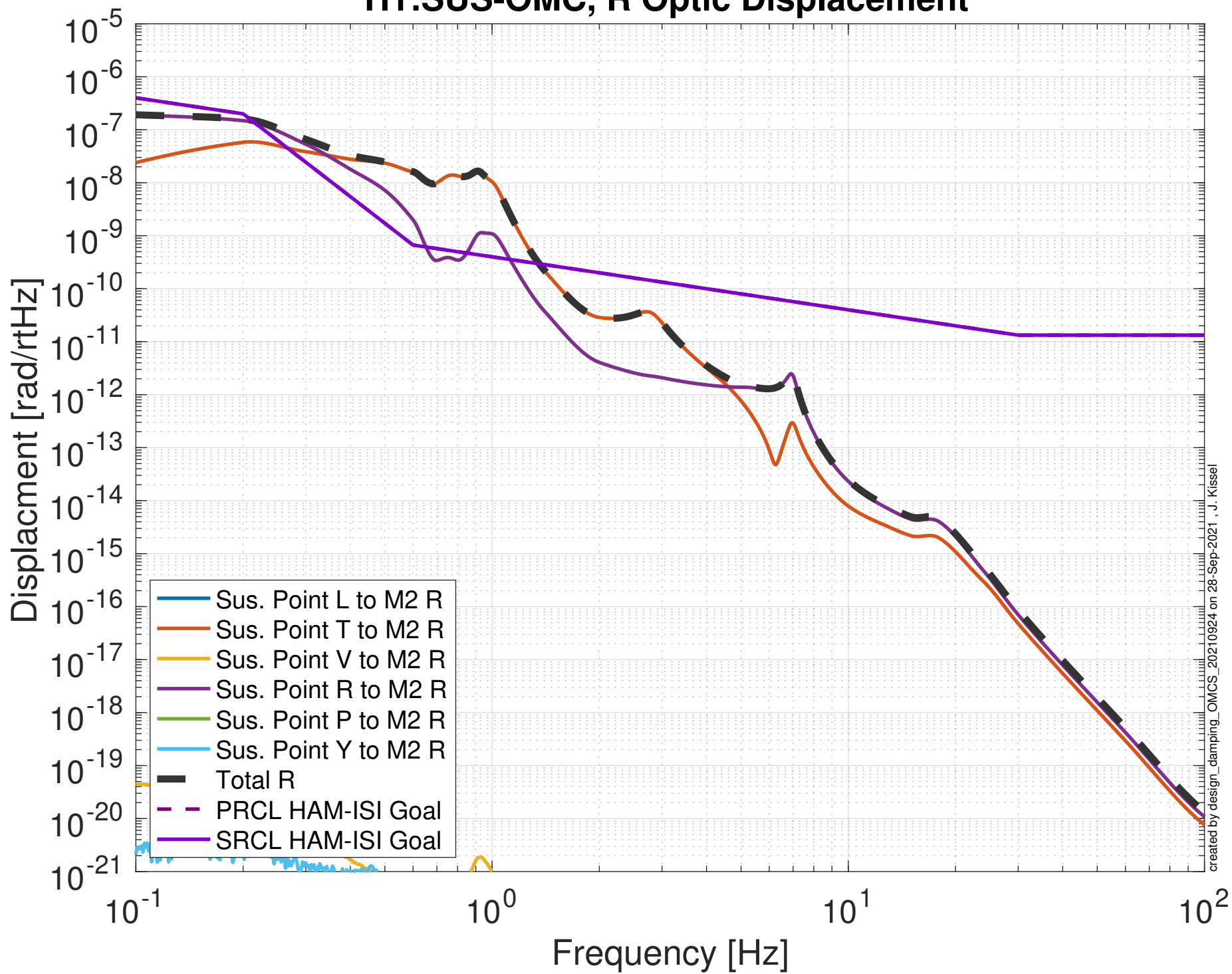


Damped Impulse Response

H1:SUS-OMC R

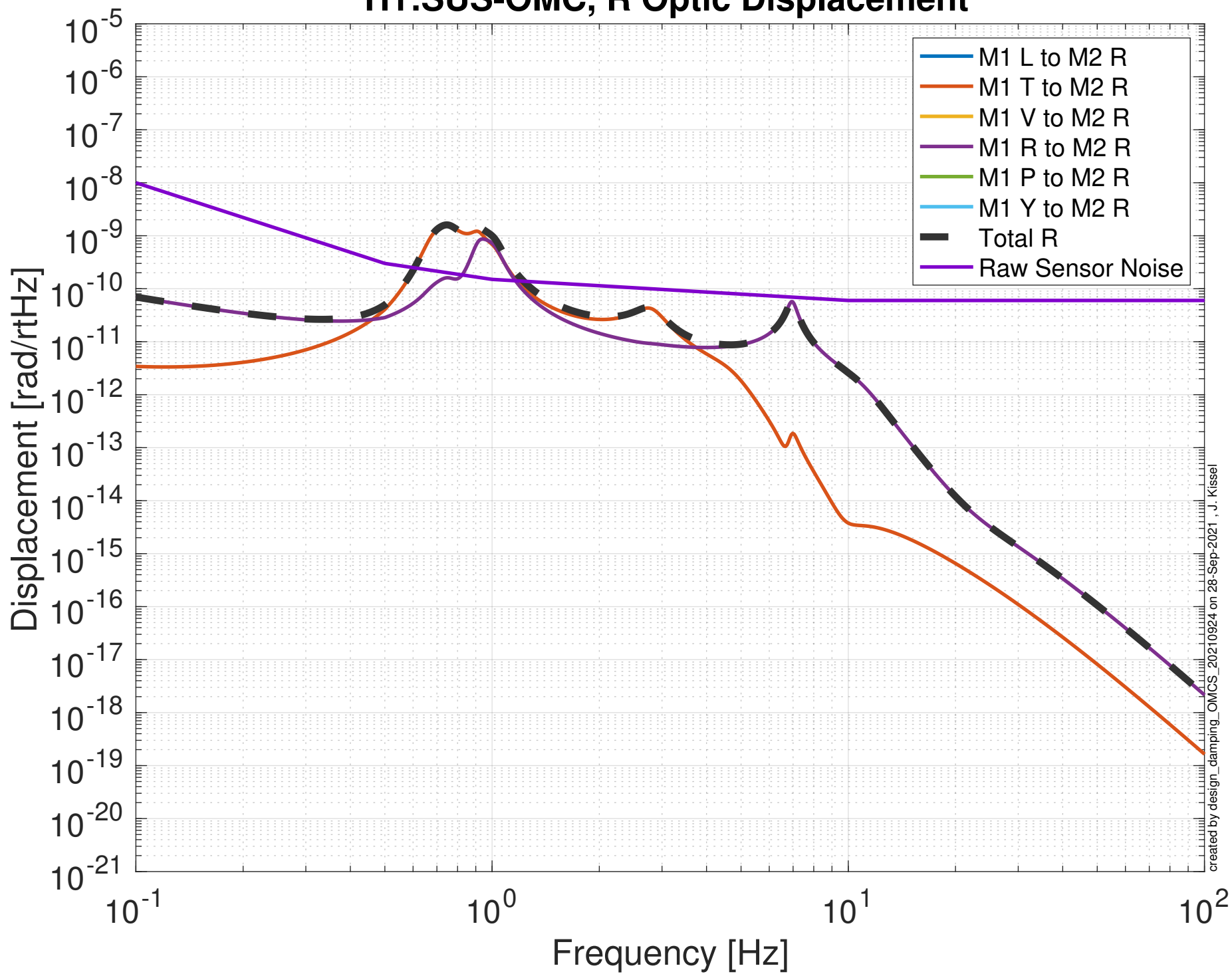


Projected Sus. Point > Optic Seismic Noise Budget H1:SUS-OMC, R Optic Displacement



created by design_damping_OMCS_20210924 on 28-Sep-2021, J. Kisse

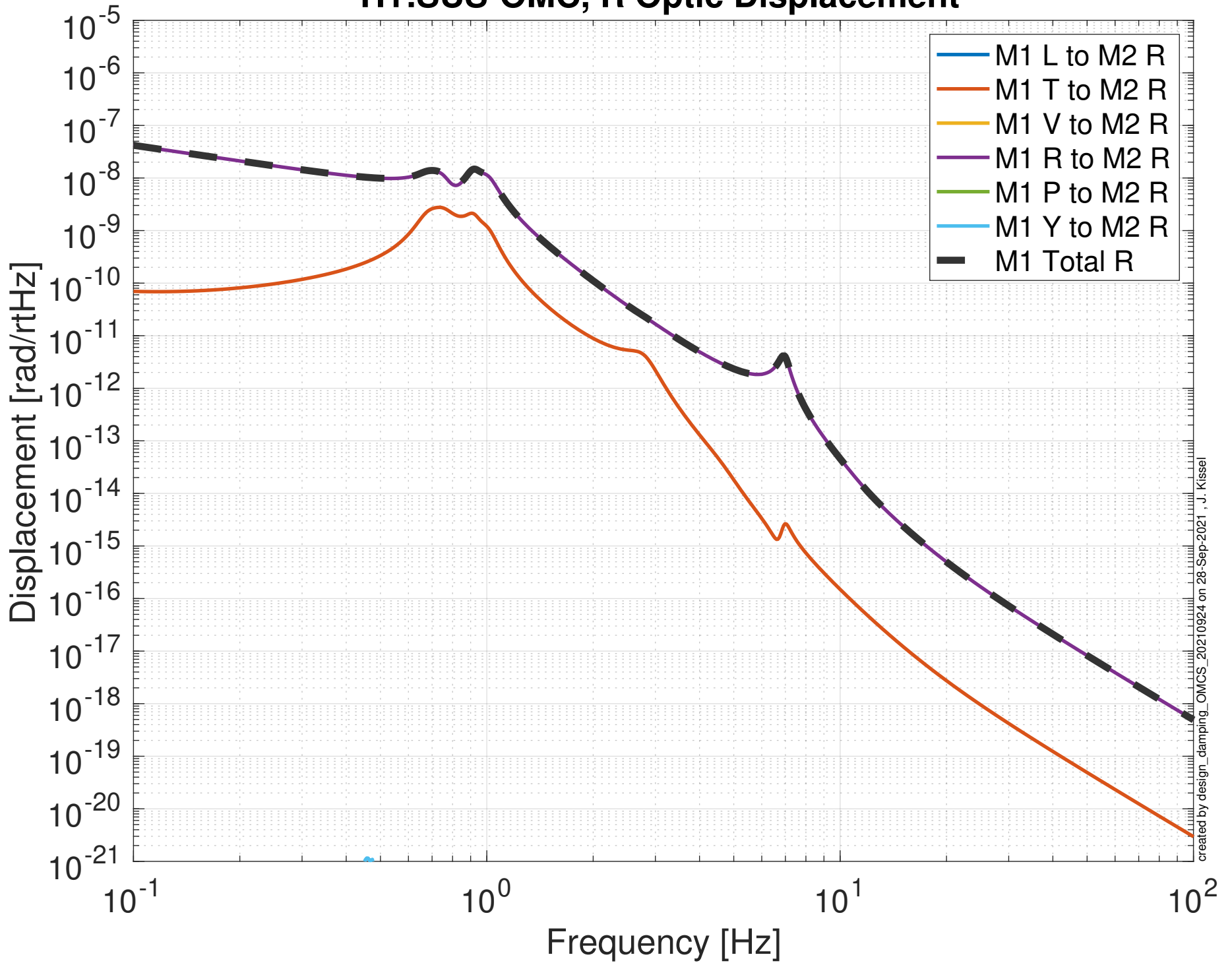
Projected Top Mass Sensor > Optic Noise Budget H1:SUS-OMC, R Optic Displacement



created by design_damping_OMCS_20210924 on 28-Sep-2021, J. Kisse

Projected M1 Mass Actuator > Optic Noise Budget

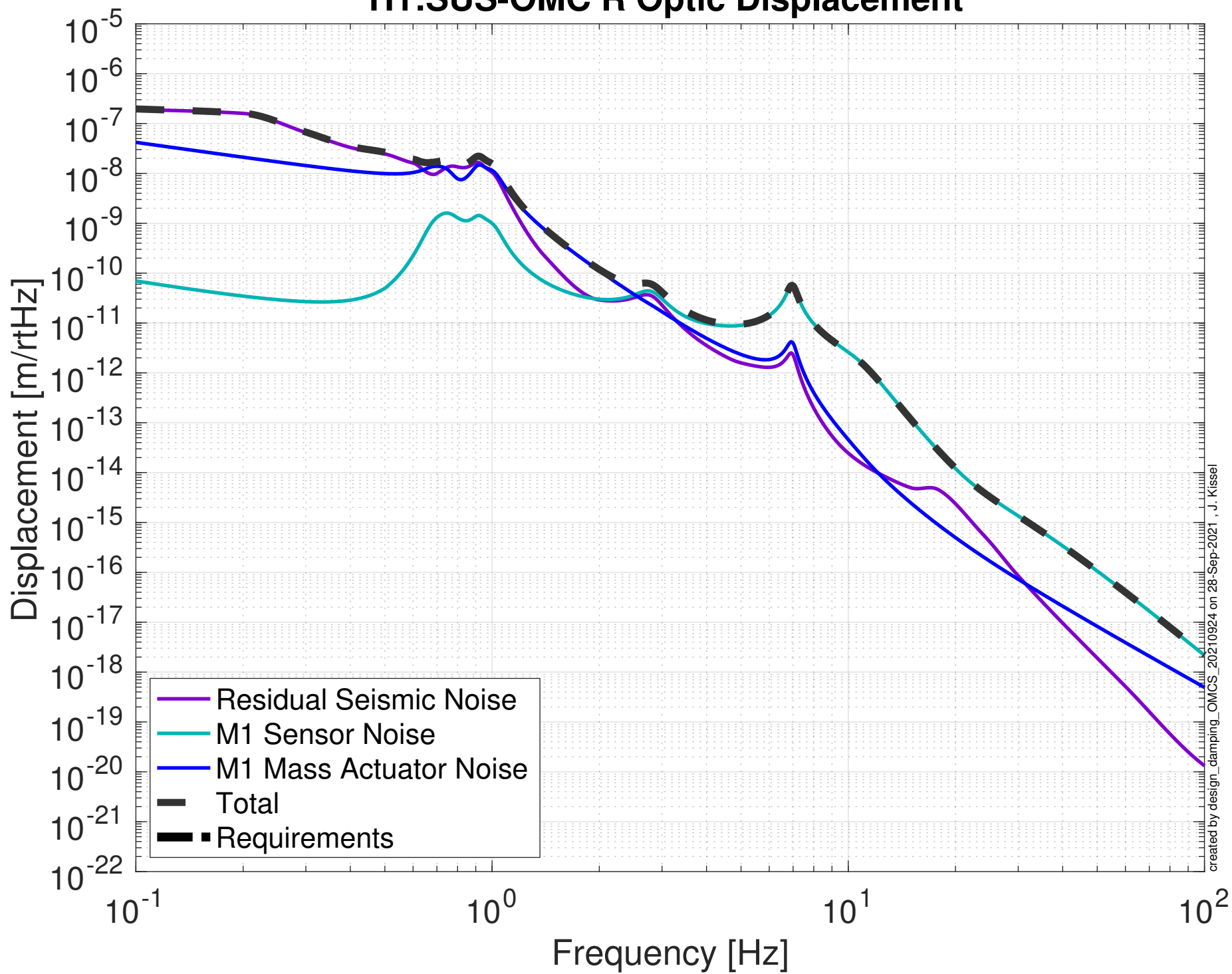
H1:SUS-OMC, R Optic Displacement



created by design_damping_OMCS_20210924 on 28-Sep-2021, J. Kisse

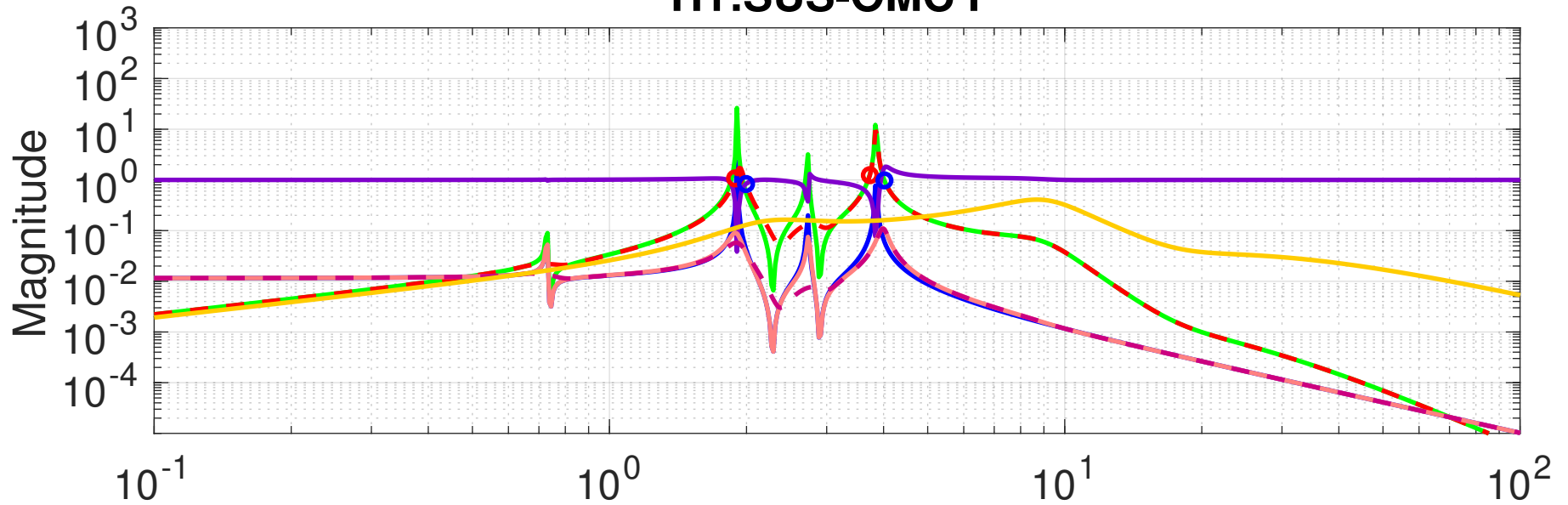
Damping Loop Performance

H1:SUS-OMC R Optic Displacement

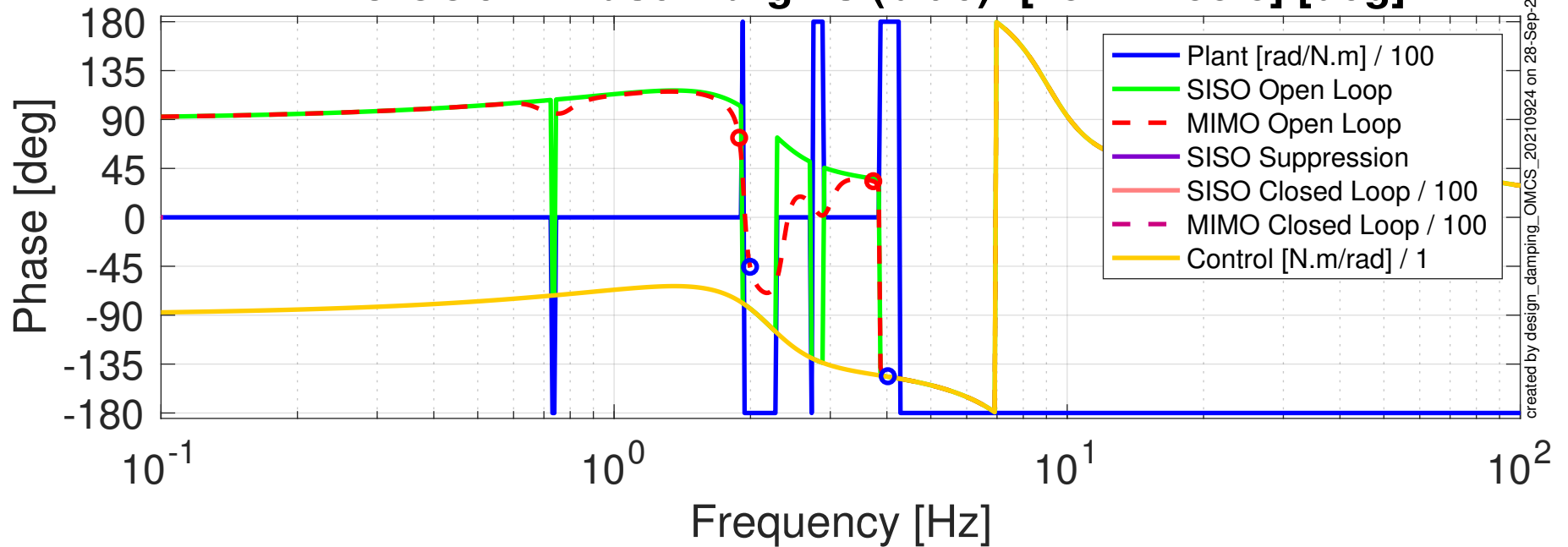


Damping Loop Design

H1:SUS-OMC P

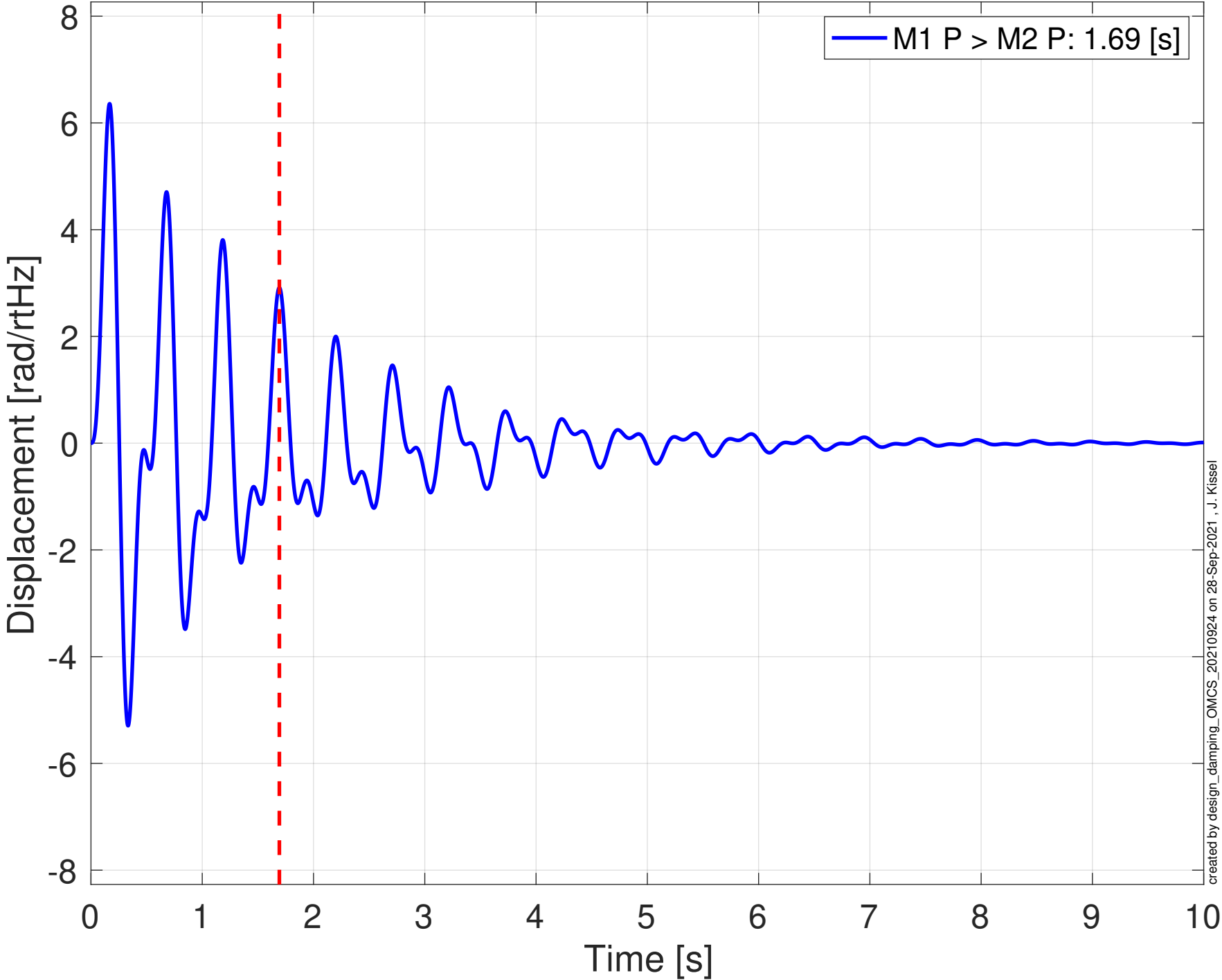


MIMO LUGF Phase Margins (red): [107 147] [deg]
MIMO UUGF Phase Margins (blue): [134 33.8] [deg]

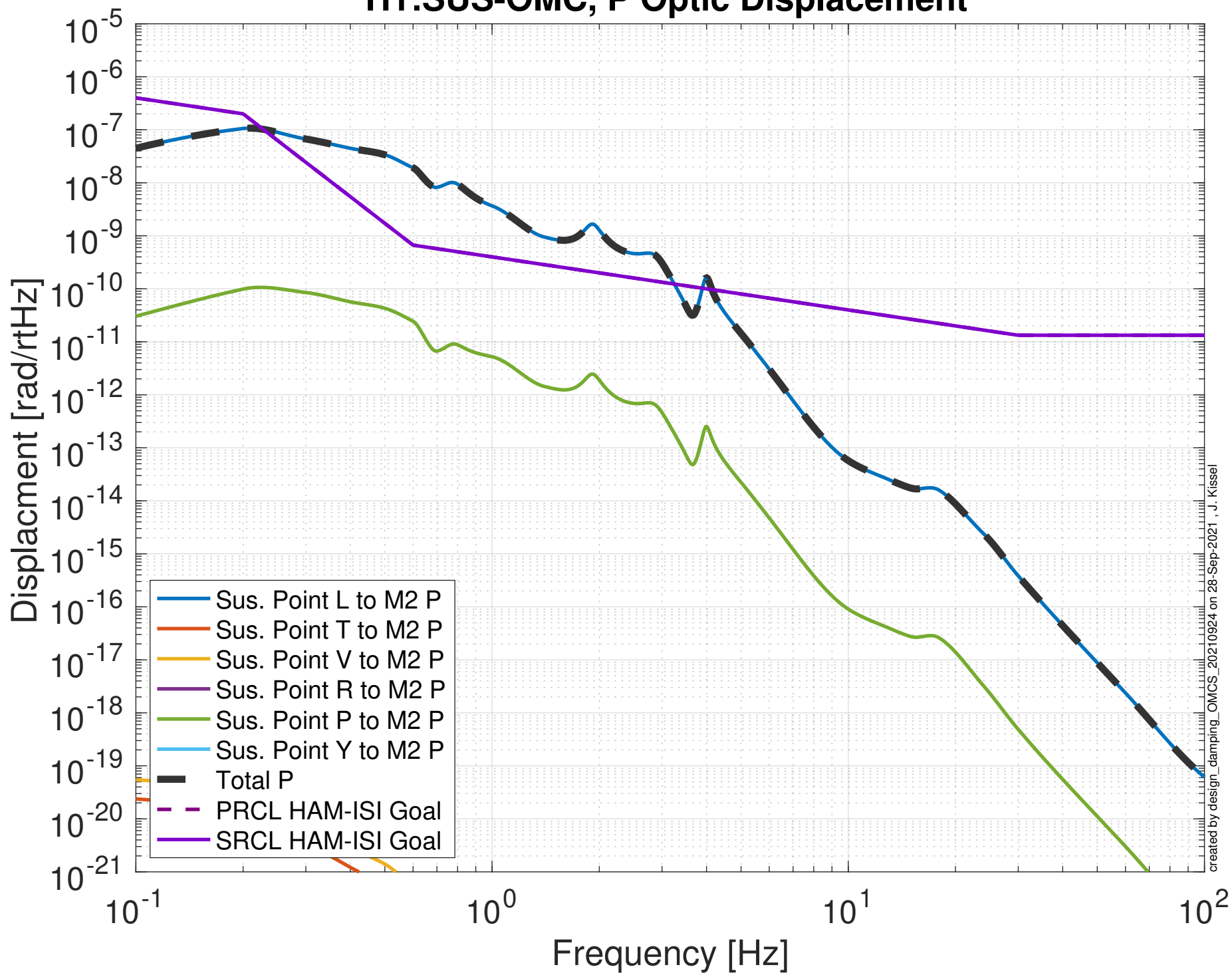


Damped Impulse Response

H1:SUS-OMC P

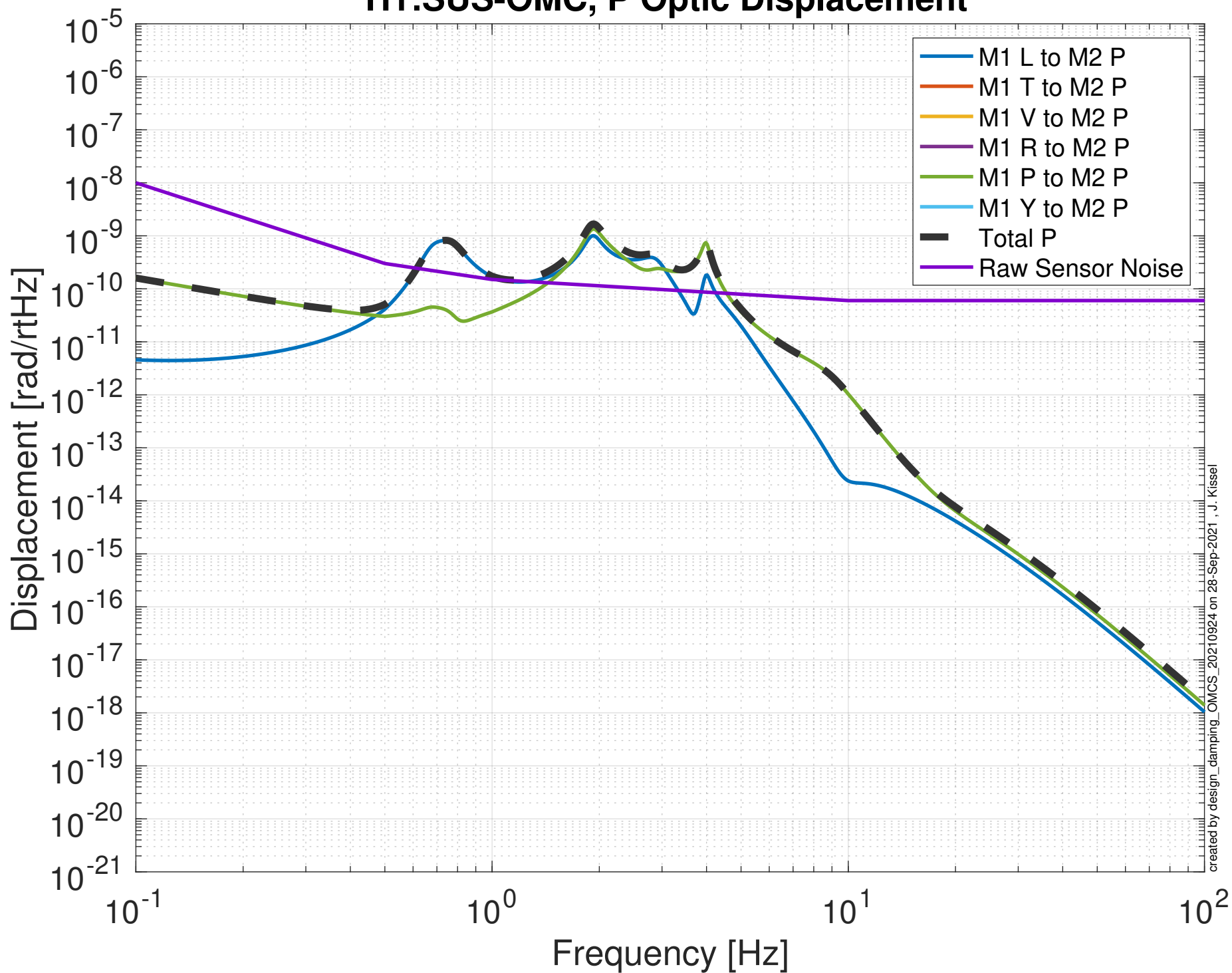


Projected Sus. Point > Optic Seismic Noise Budget H1:SUS-OMC, P Optic Displacement



created by design_damping_OMCS_20210924 on 28-Sep-2021, J. Kissel

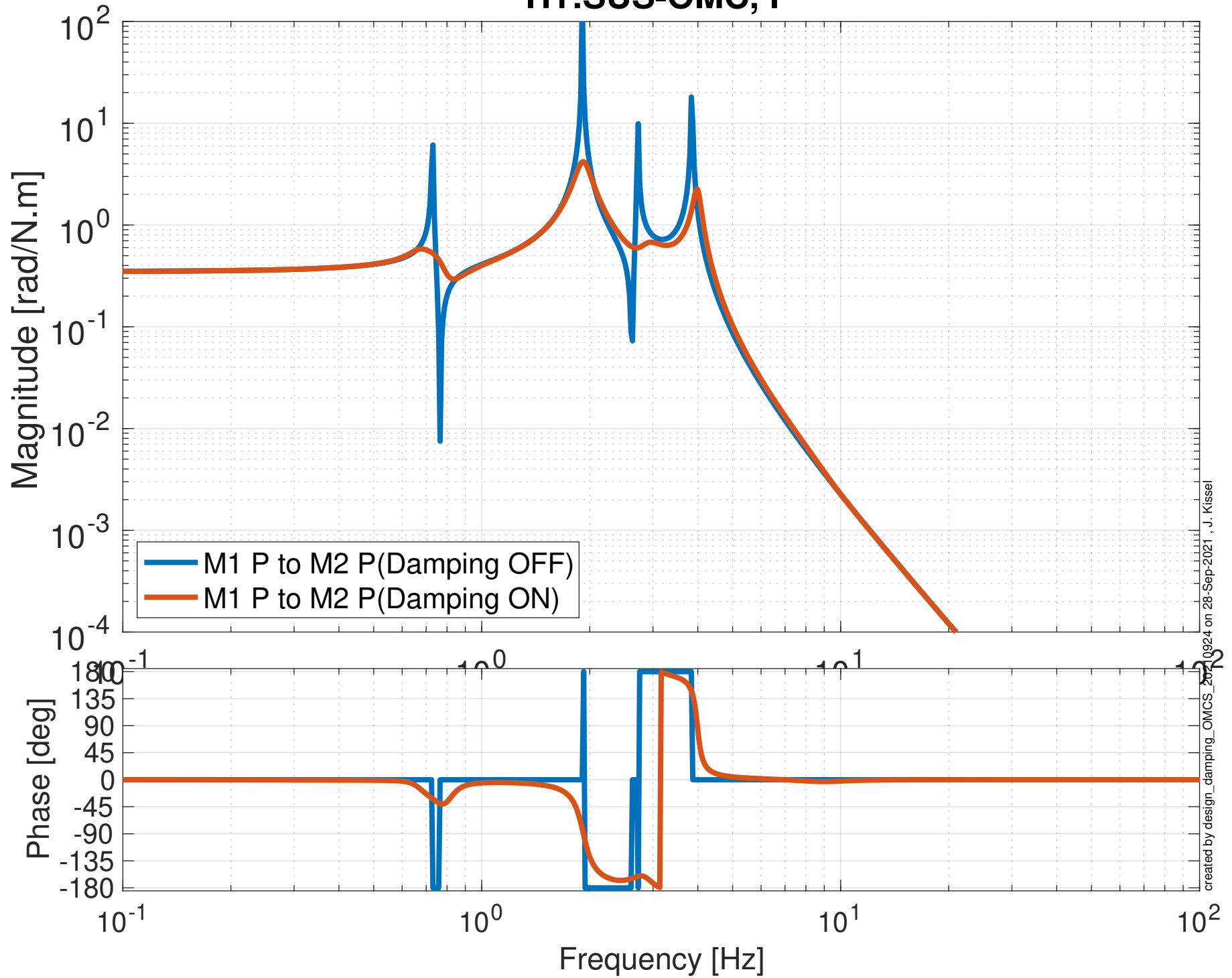
Projected Top Mass Sensor > Optic Noise Budget H1:SUS-OMC, P Optic Displacement



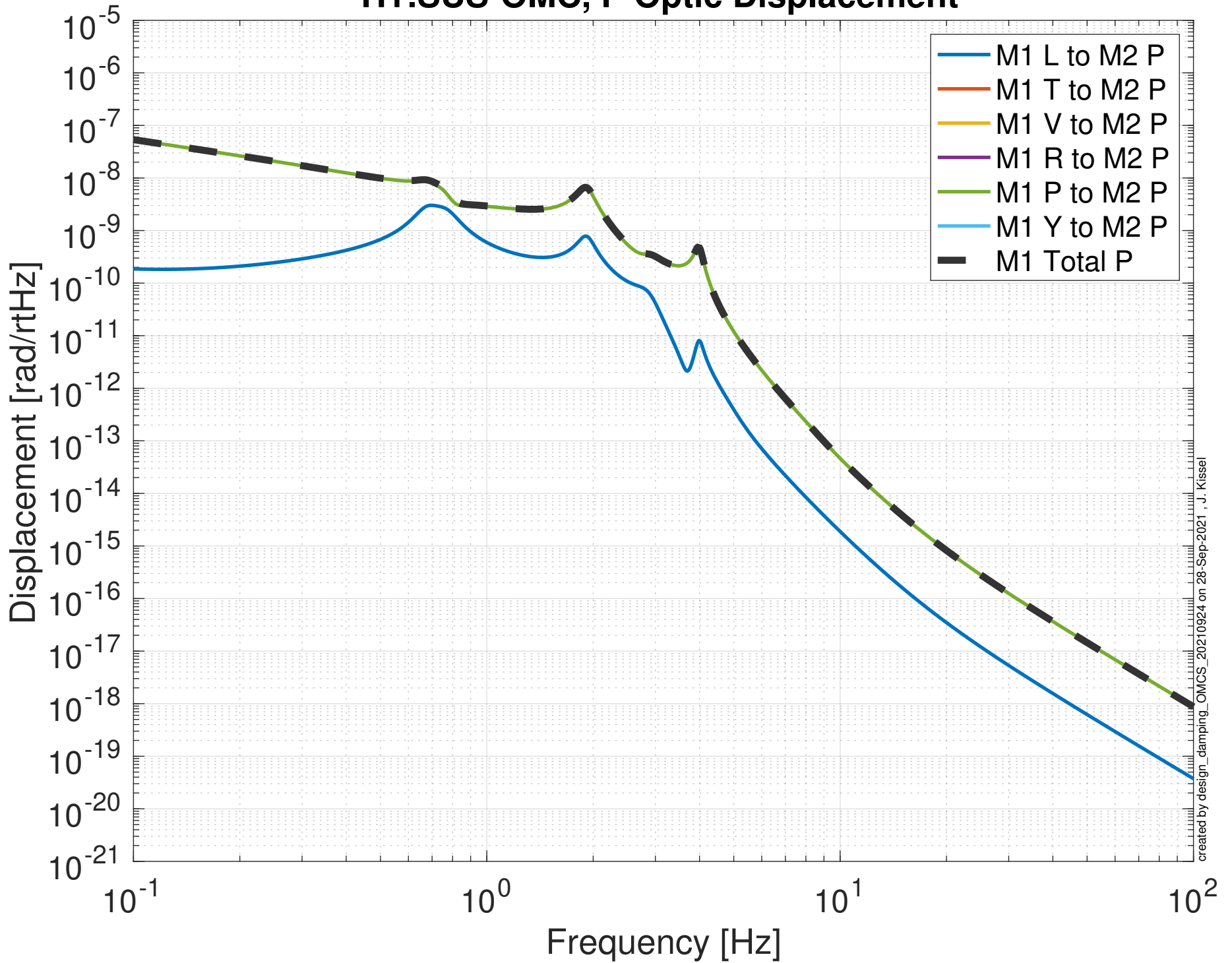
created by design_damping_OMCS_20210924 on 28-Sep-2021, J. Kissel

Global Control Transfer Functions to Optic

H1:SUS-OMC, P



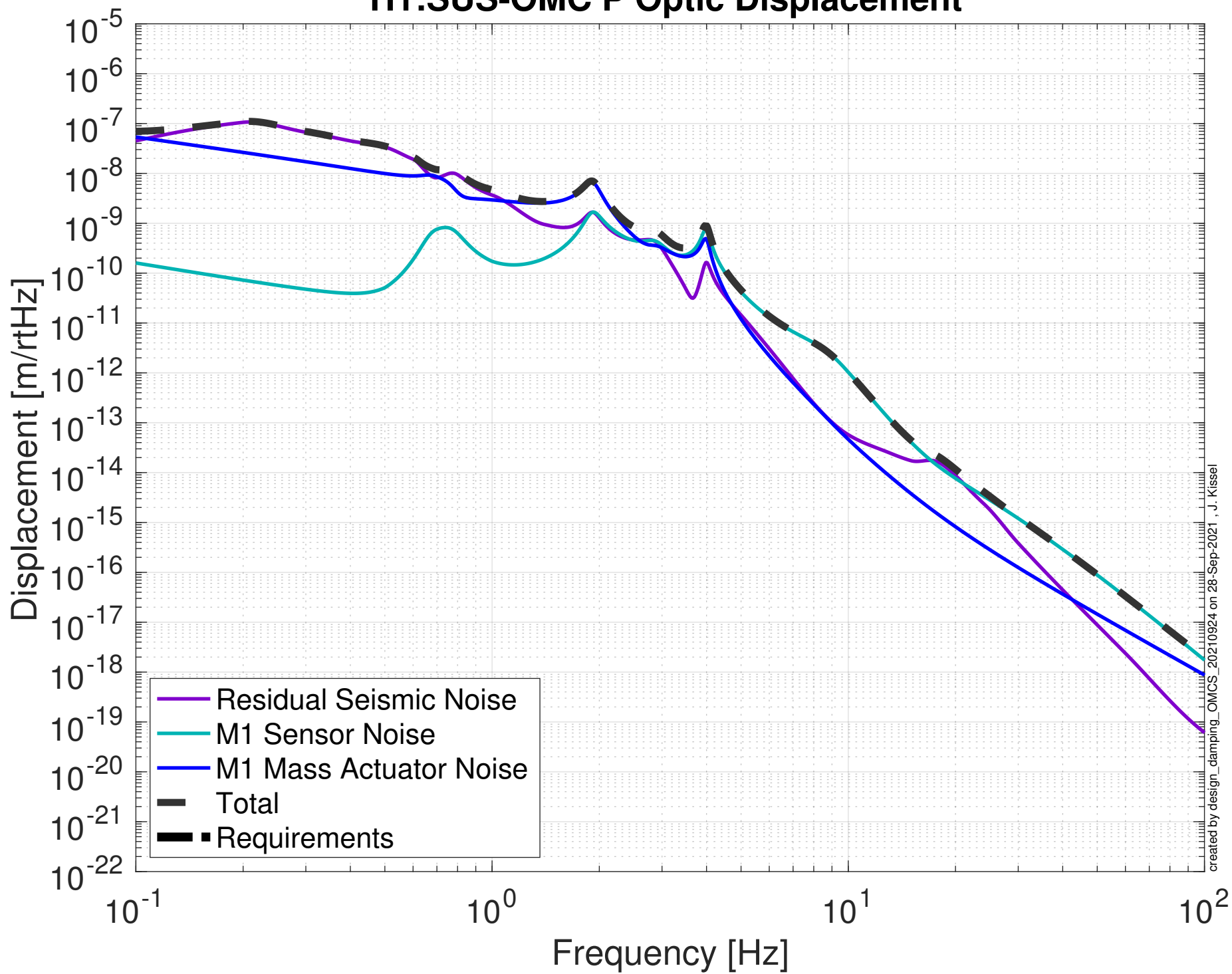
Projected M1 Mass Actuator > Optic Noise Budget H1:SUS-OMC, P Optic Displacement



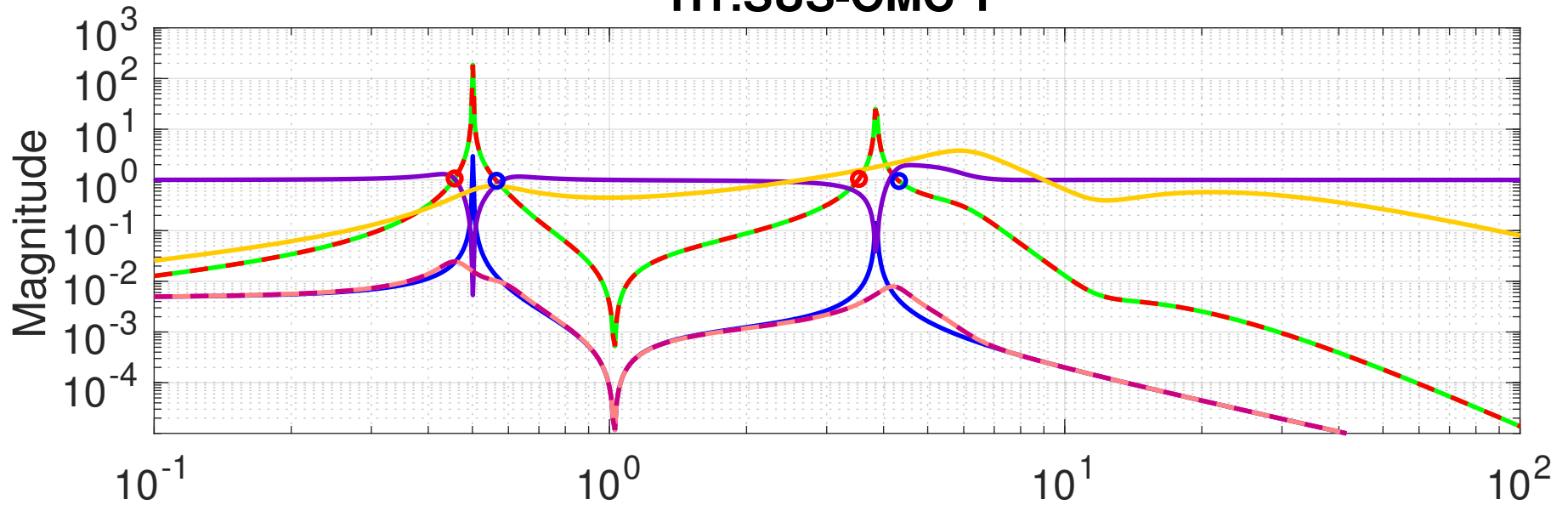
created by design_damping_OMCS_20210924 on 28-Sep-2021, J. Kisse

Damping Loop Performance

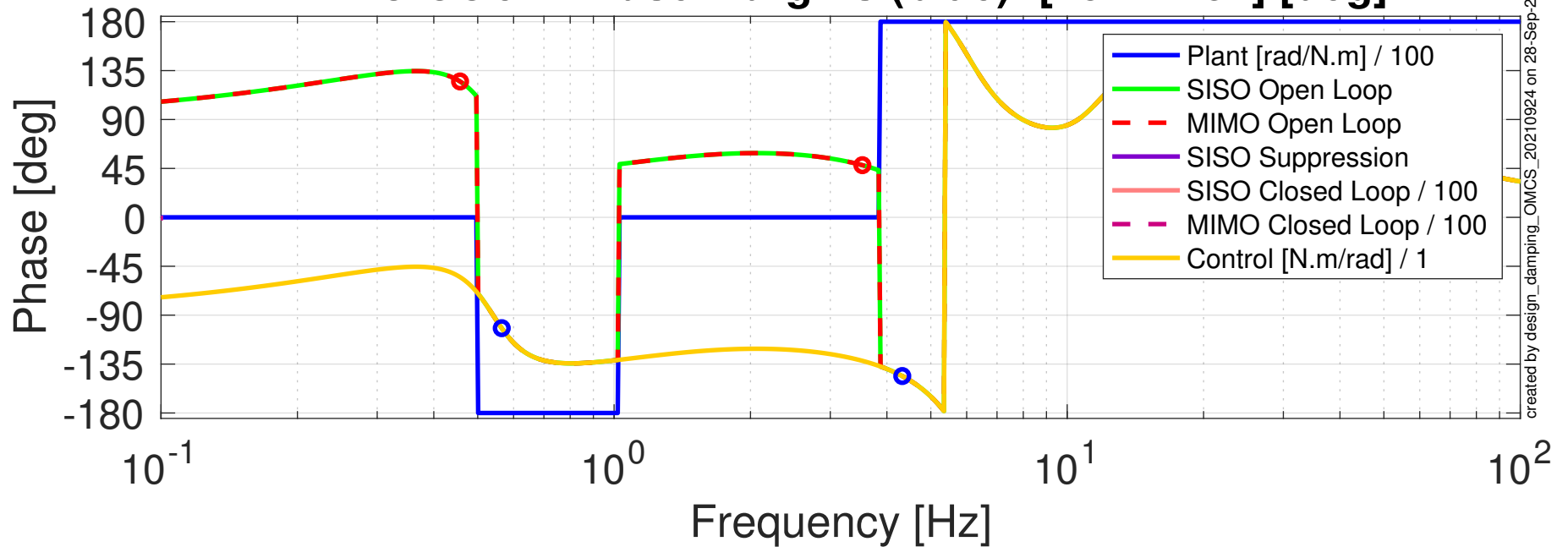
H1:SUS-OMC P Optic Displacement



Damping Loop Design H1:SUS-OMC Y

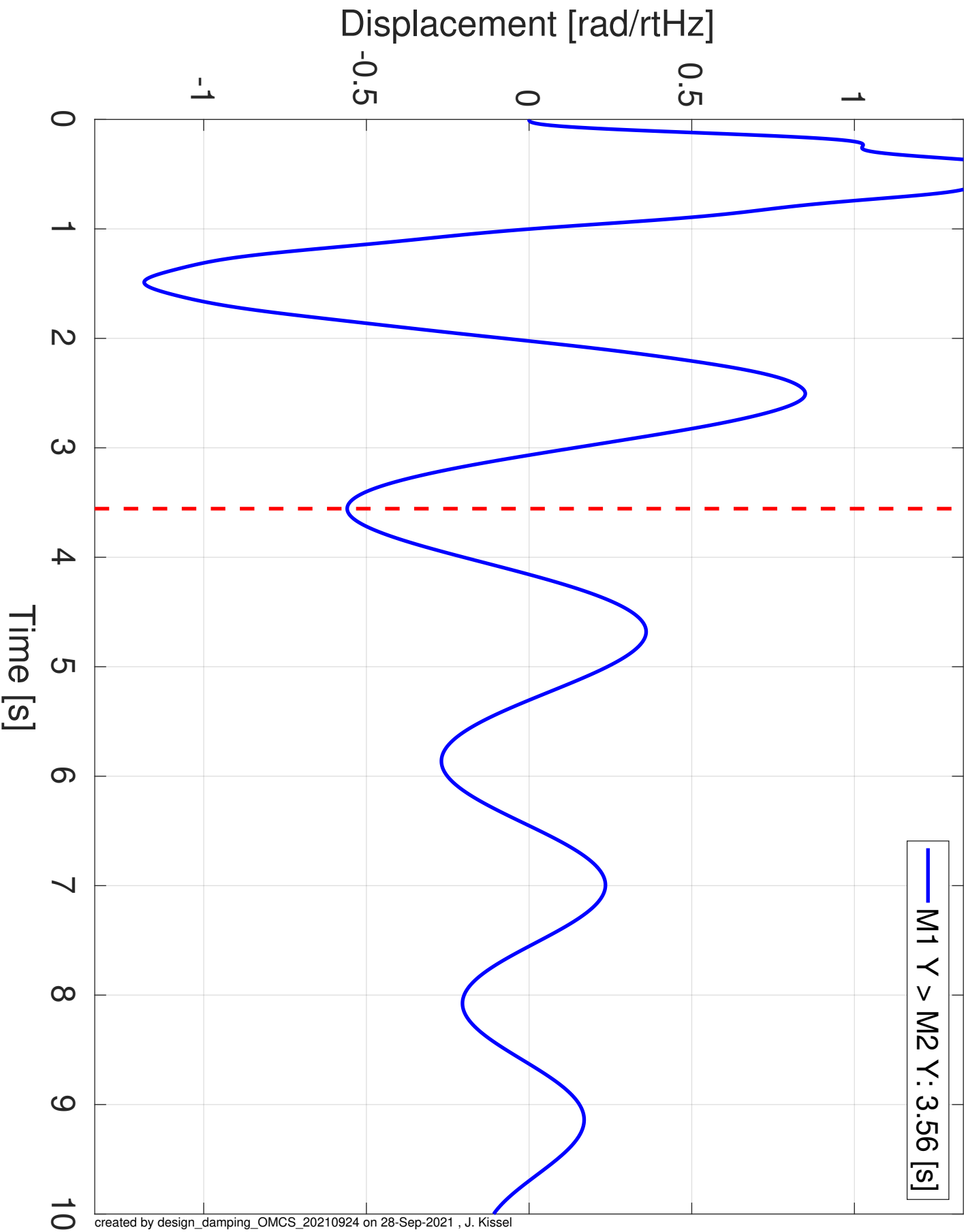


MIMO LUGF Phase Margins (red): [55 132] [deg]
MIMO UUGF Phase Margins (blue): [78 34] [deg]

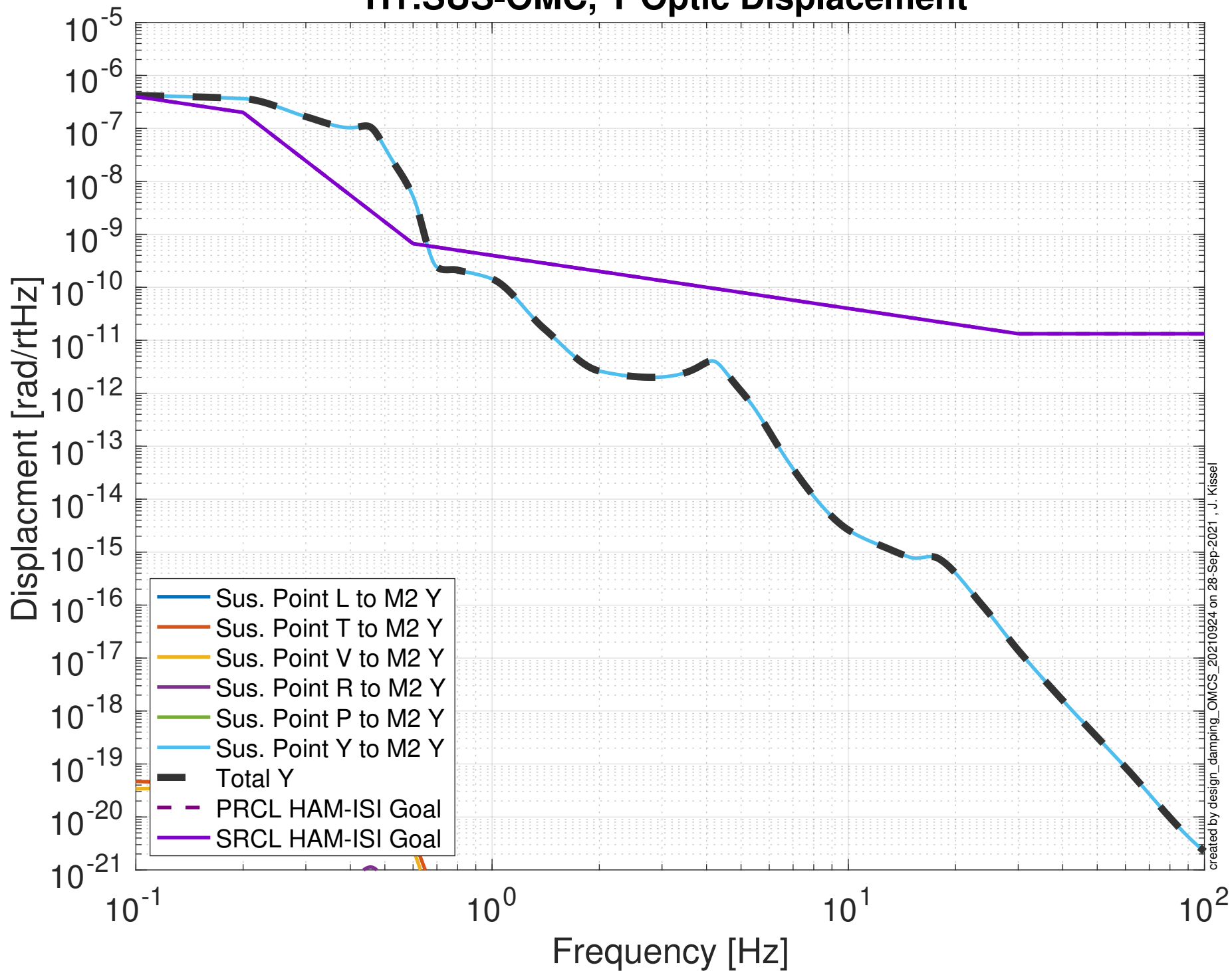


Damped Impulse Response

H1:SUS-OMC Y

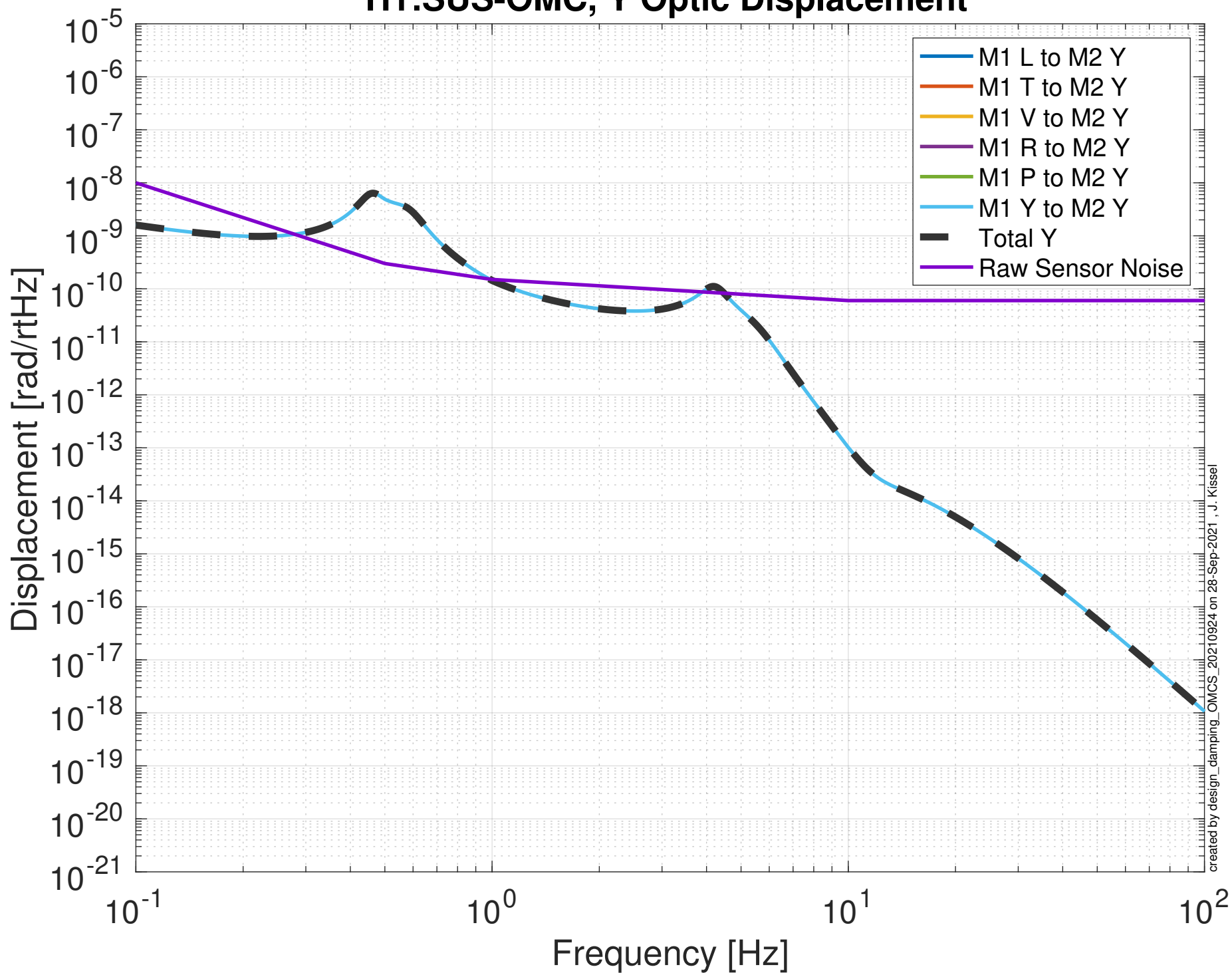


Projected Sus. Point > Optic Seismic Noise Budget H1:SUS-OMC, Y Optic Displacement



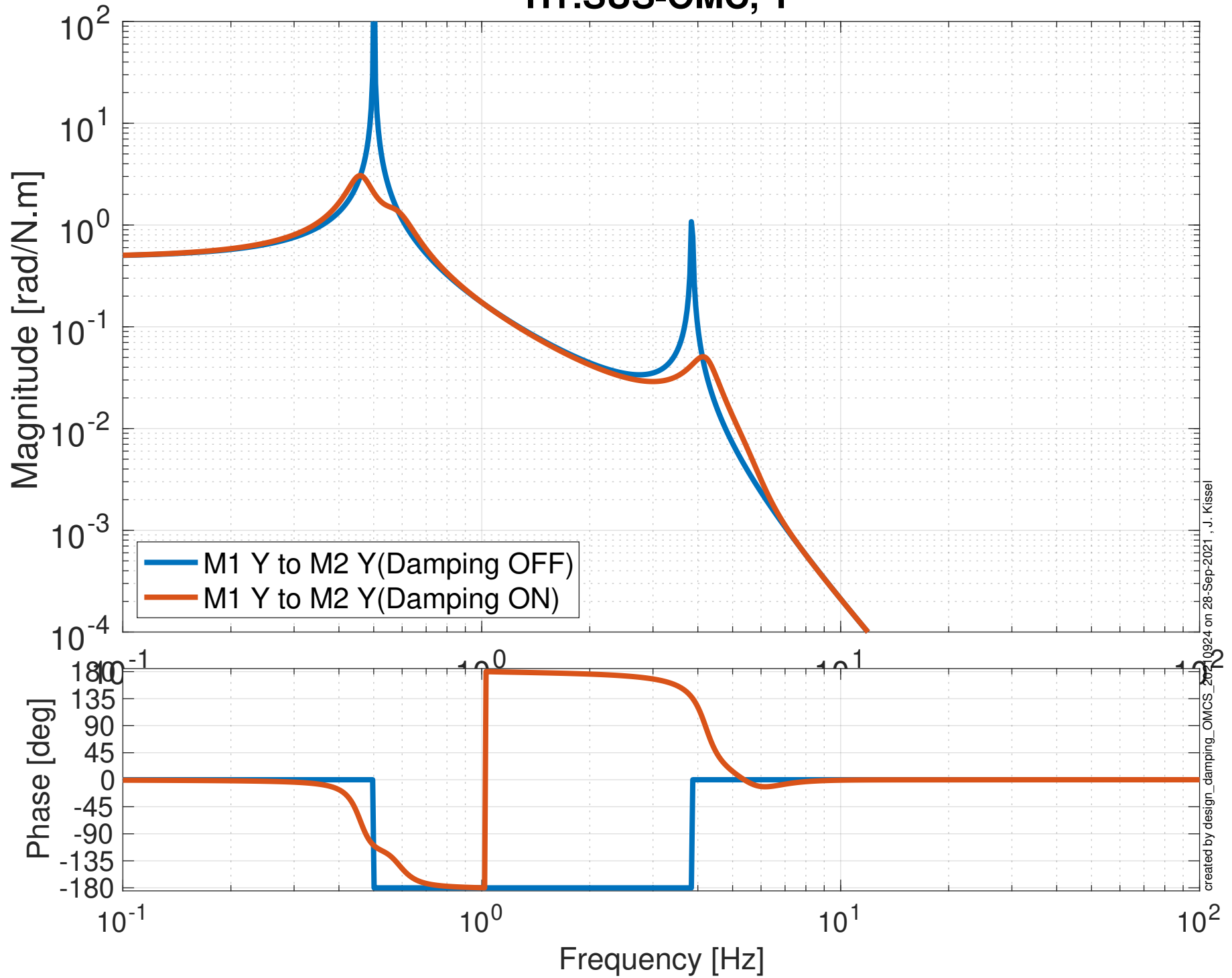
created by design_damping_OMCS_20210924 on 28-Sep-2021, J. Kisse

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

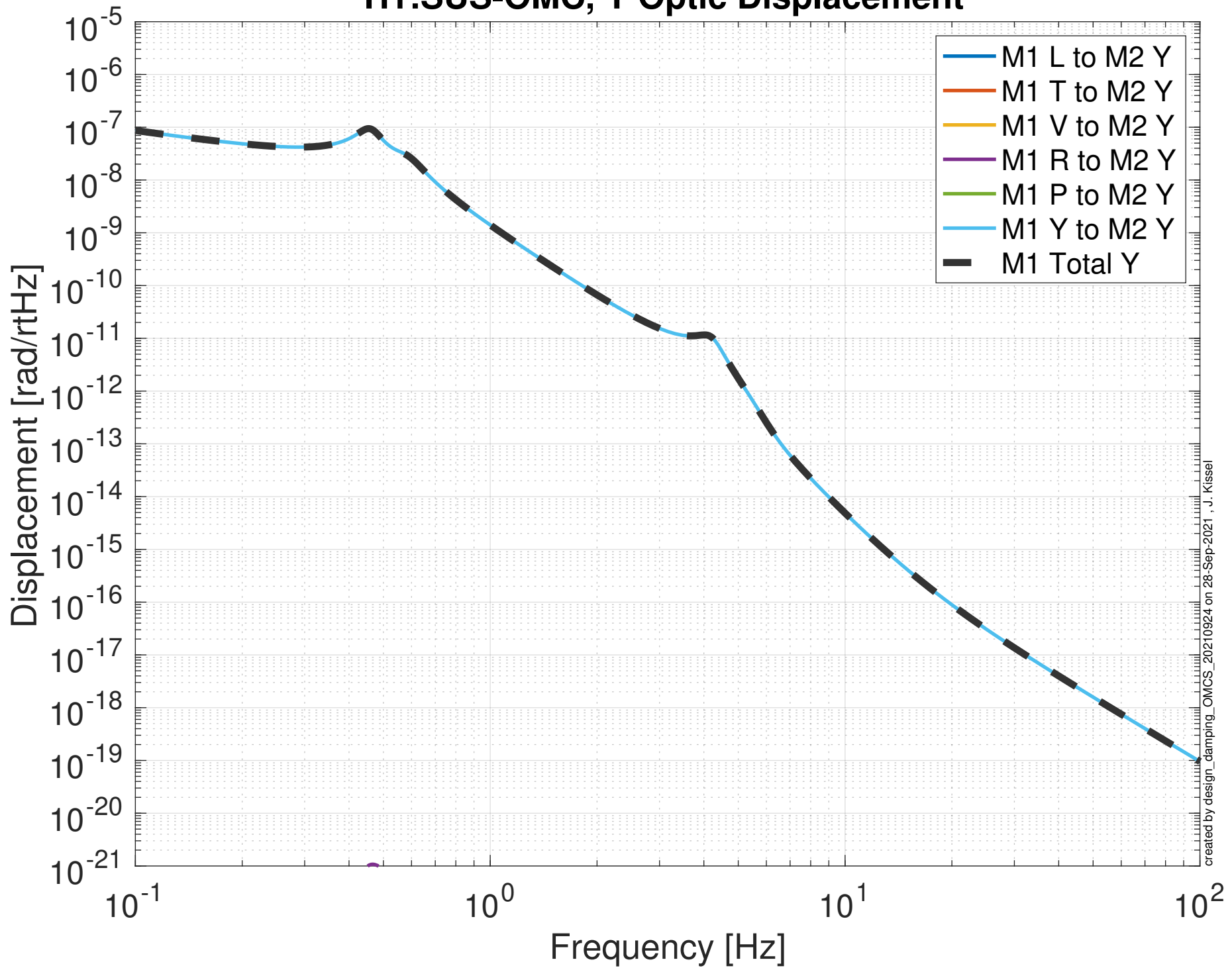


created by design_damping_OMCS_20210924 on 28-Sep-2021, J. Kisse

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



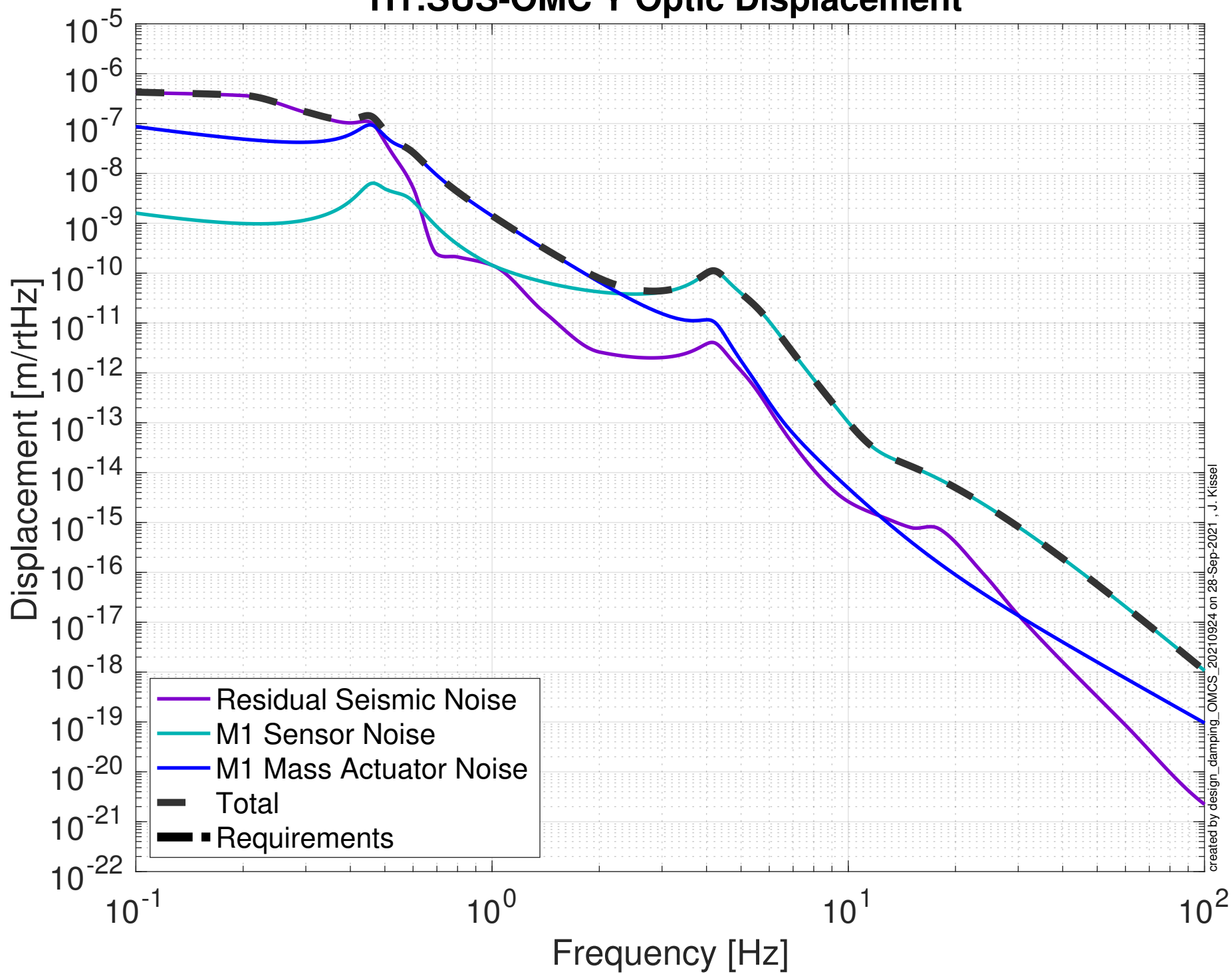
Projected M1 Mass Actuator > Optic Noise Budget H1:SUS-OMC, Y Optic Displacement



created by design_damping_OMCS_20210924 on 28-Sep-2021, J. Kisse

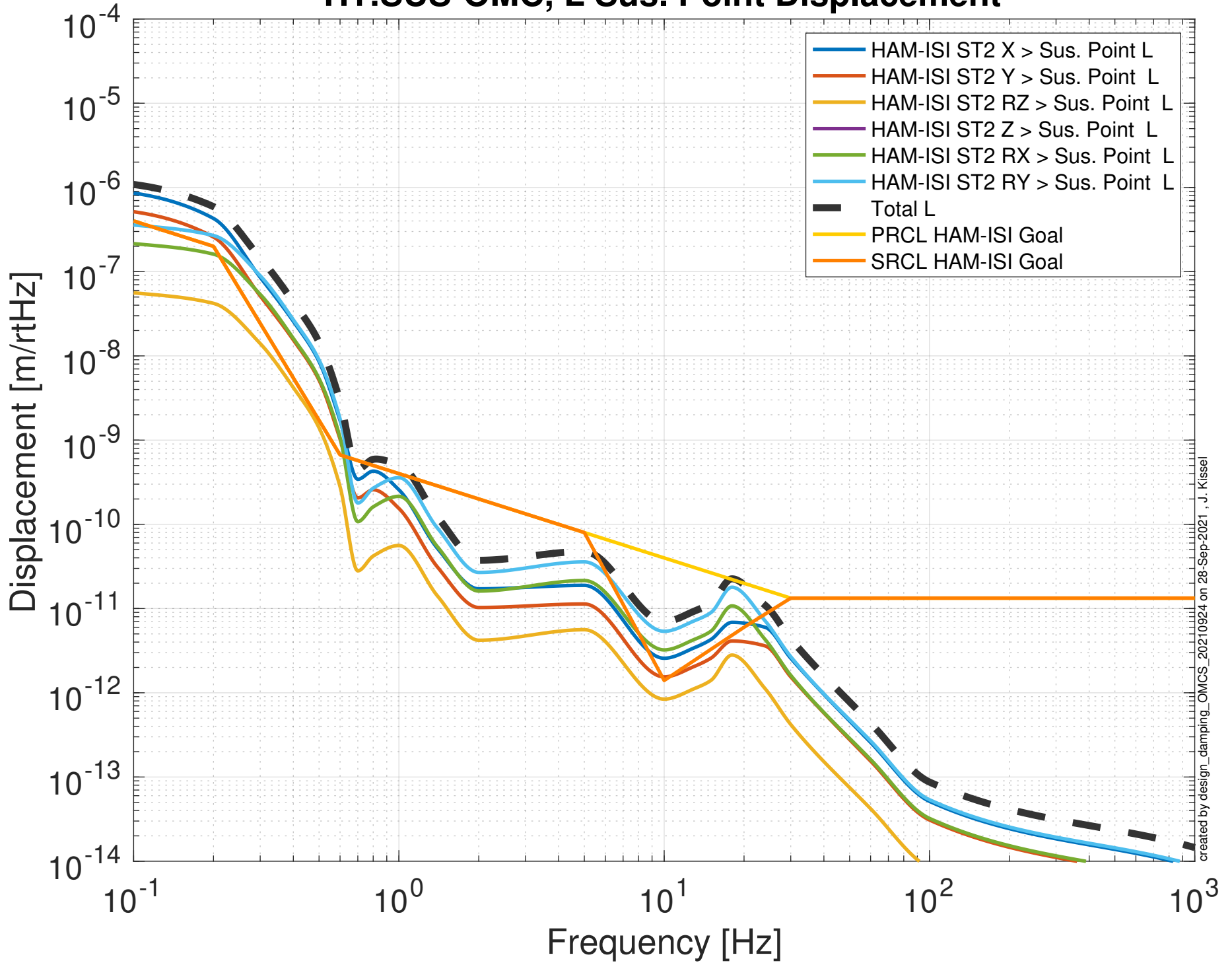
Damping Loop Performance

H1:SUS-OMC Y Optic Displacement



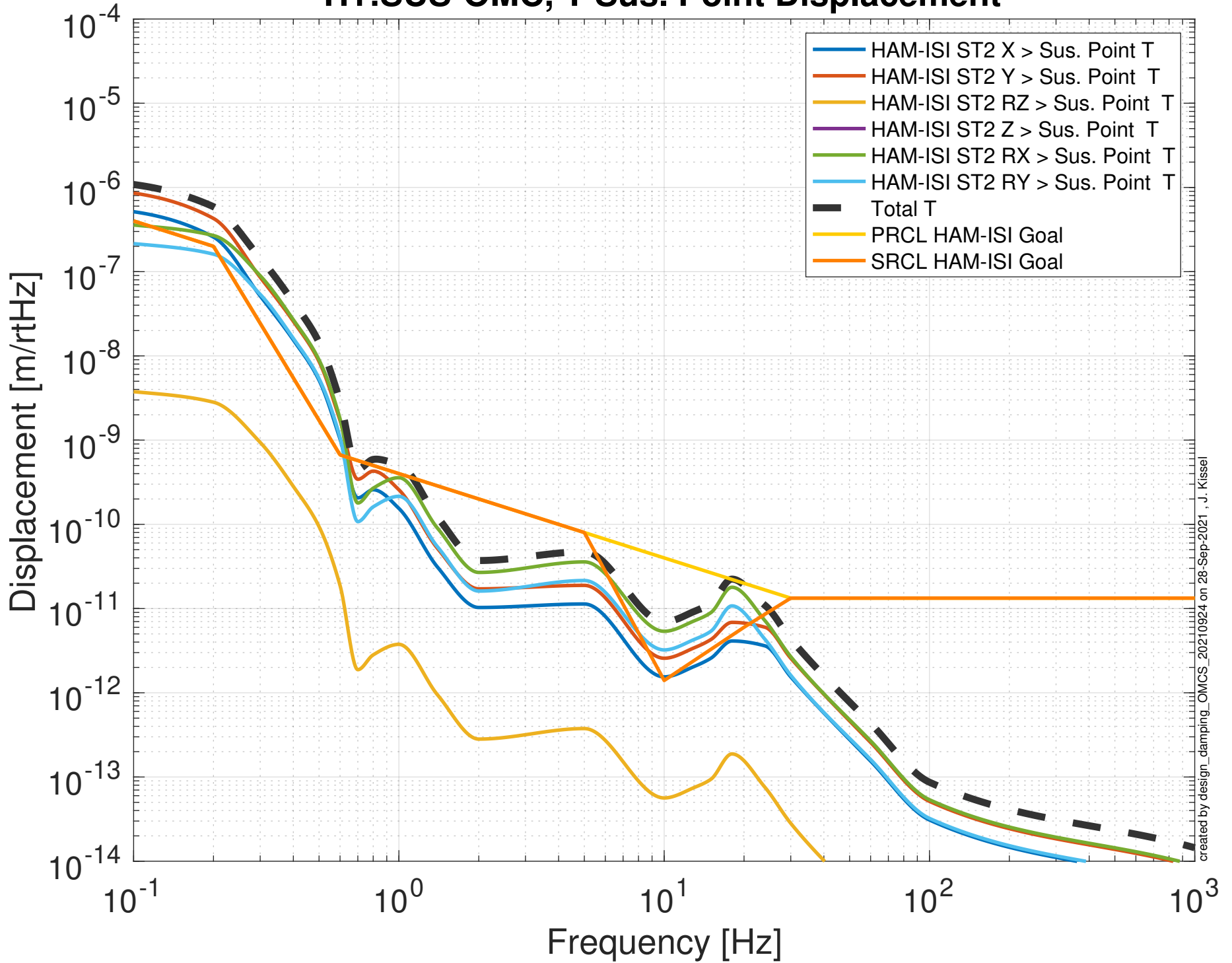
Projected ISI Seismic Noise Budget

H1:SUS-OMC, L Sus. Point Displacement



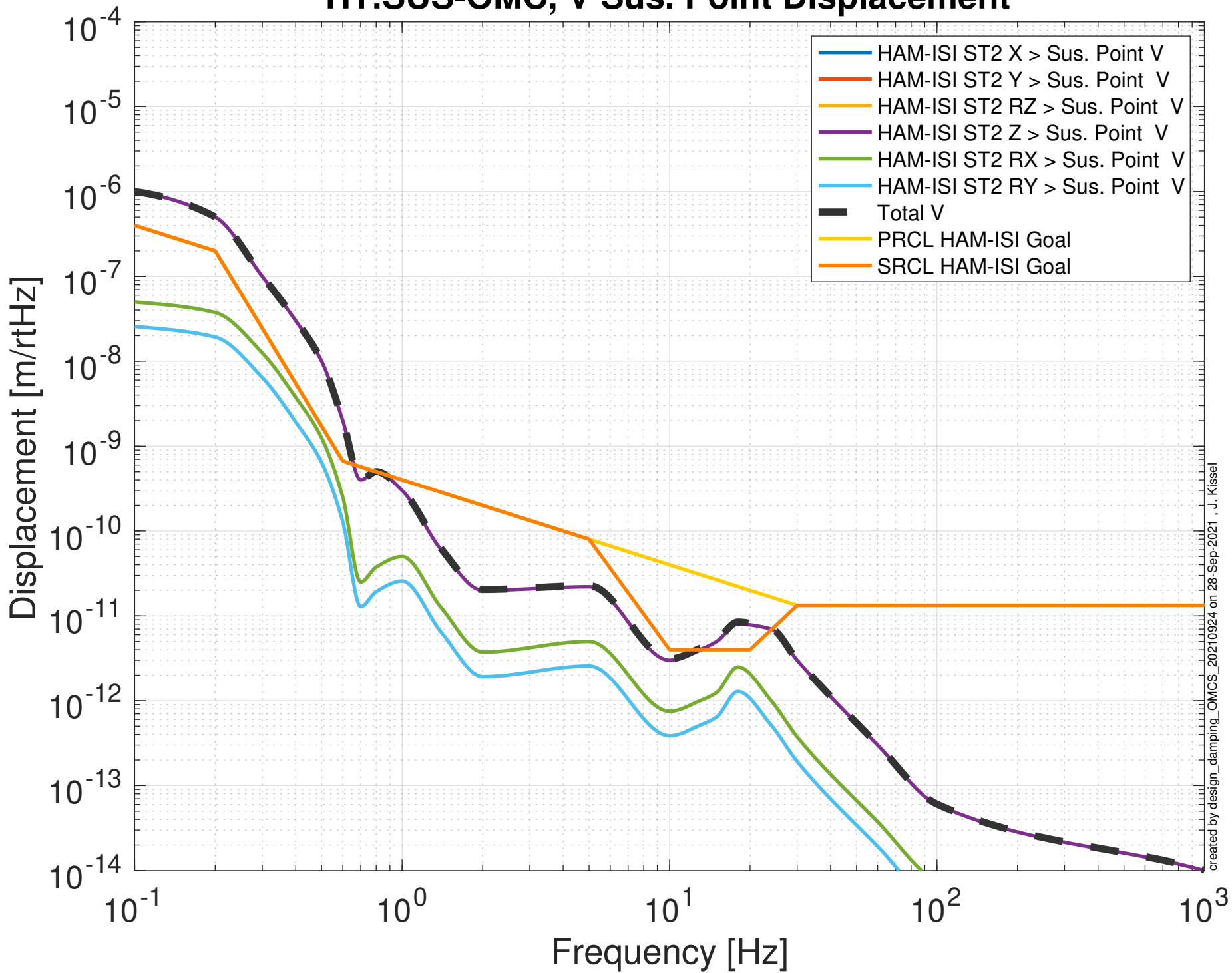
created by design_damping_OMCS_20210924 on 28-Sep-2021, J. Kissel

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



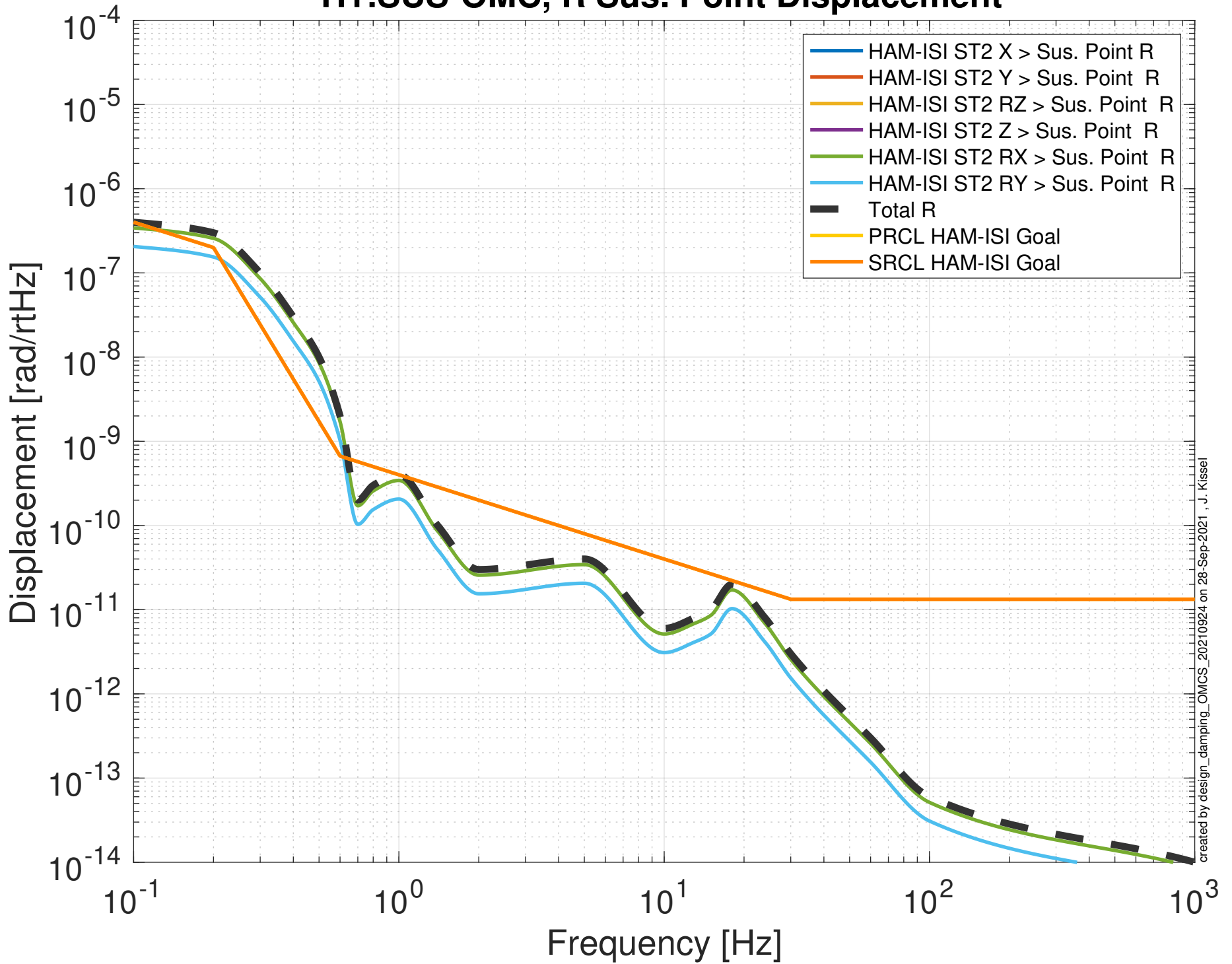
created by design_damping_OMCS_20210924 on 28-Sep-2021, J. Kisse

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



created by design_damping_OMCS_20210924 on 28-Sep-2021, J. Kissel

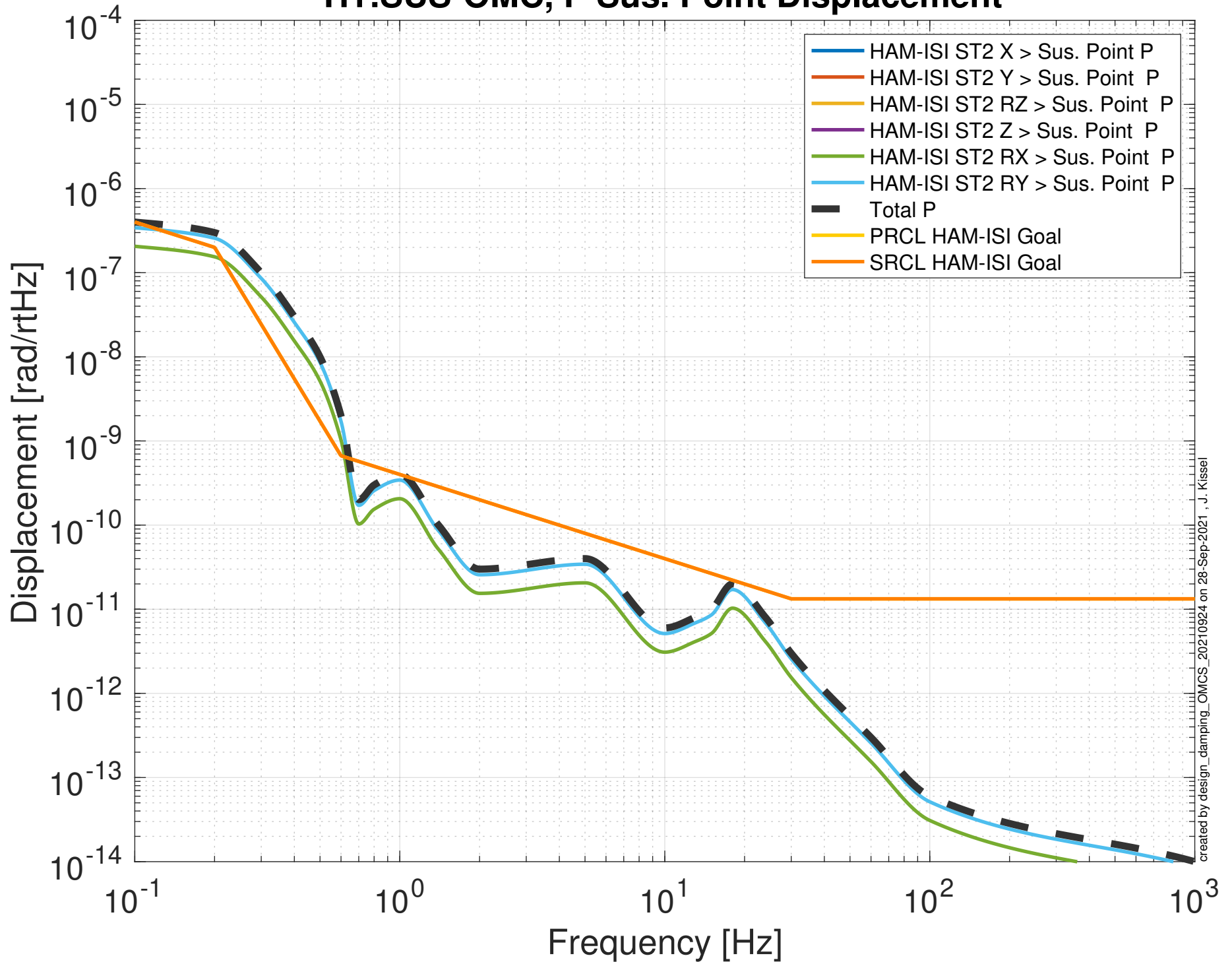
Projected ISI Seismic Noise Budget H1:SUS-OMC, R Sus. Point Displacement



created by design_damping_OMCS_20210924 on 28-Sep-2021, J. Kissel

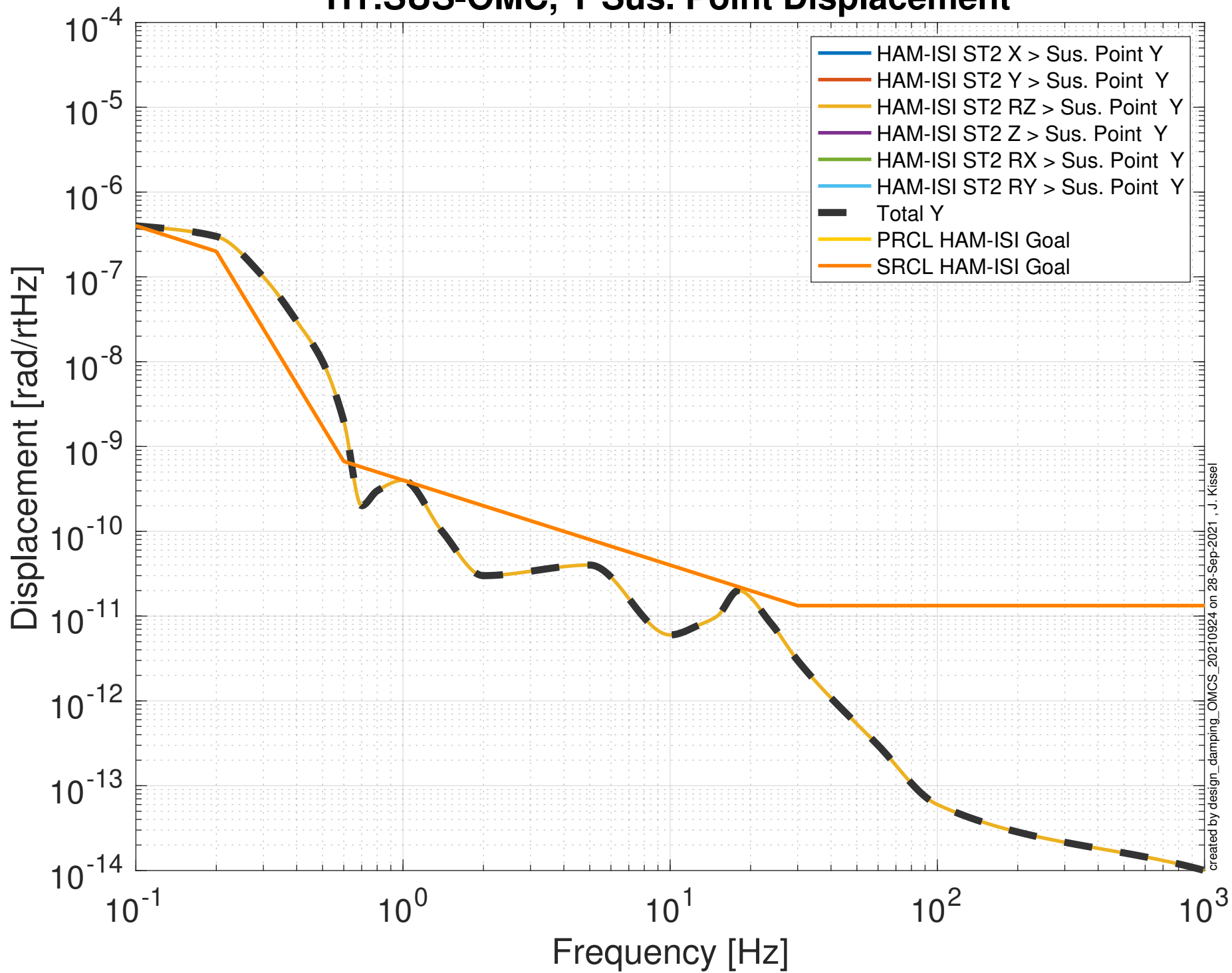
Projected ISI Seismic Noise Budget

H1:SUS-OMC, P Sus. Point Displacement



Projected ISI Seismic Noise Budget

H1:SUS-OMC, Y Sus. Point Displacement



created by design_damping_OMCS_20210924 on 28-Sep-2021, J. Kissel

Projected Input Top Mass Sensor Noise Budget

