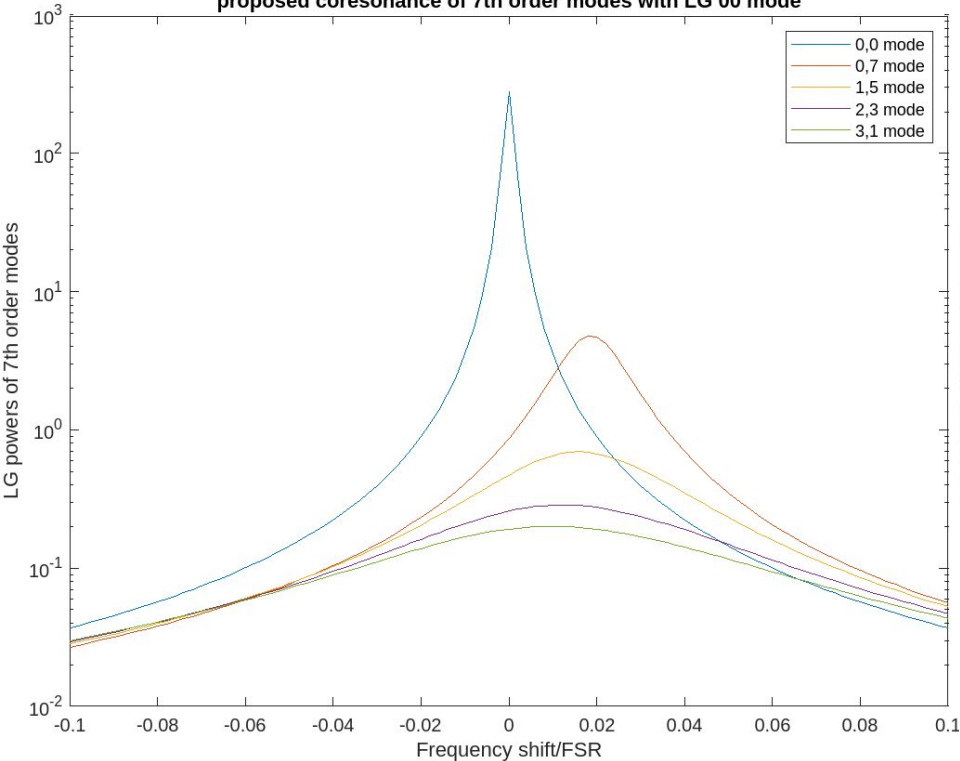


ETM12 ETM12 low absorption ($0.3e-6$) without FROSTI

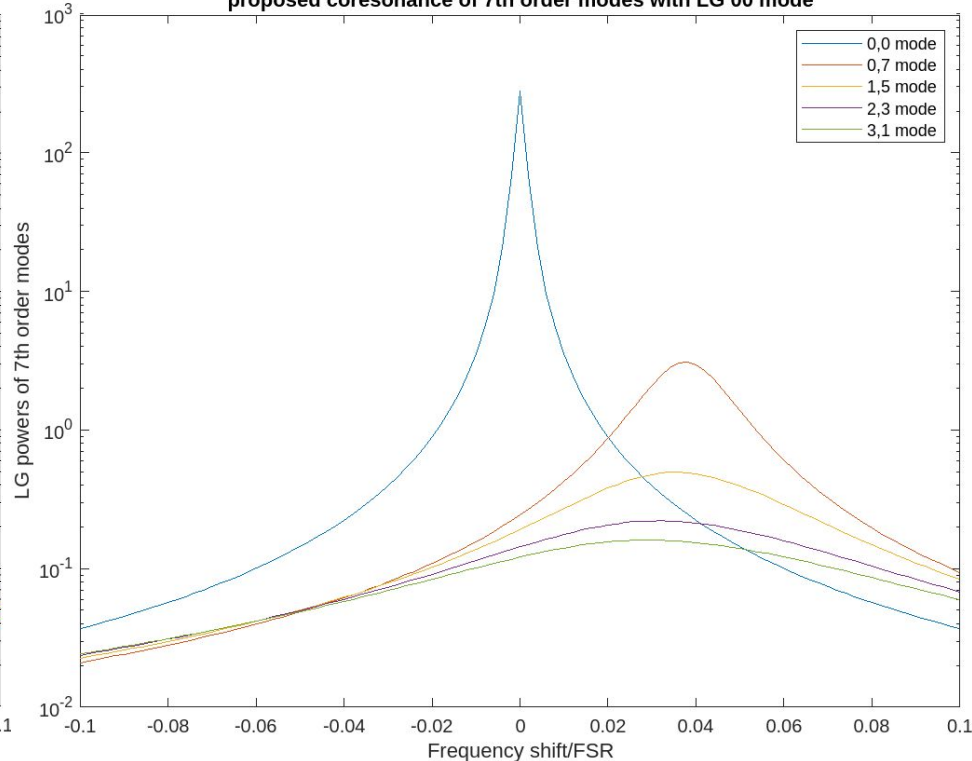
Arm power 400 kW

proposed coresonance of 7th order modes with LG 00 mode



Arm power 750 kW

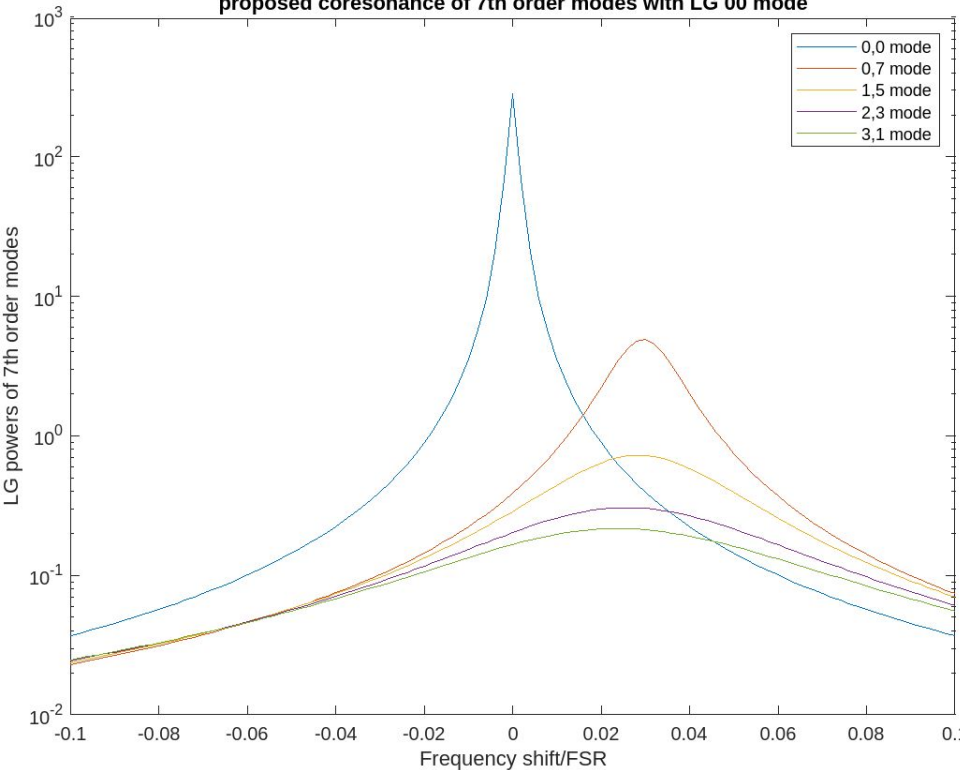
proposed coresonance of 7th order modes with LG 00 mode



ITM plume guess ETM12 low absorption without FROSTI

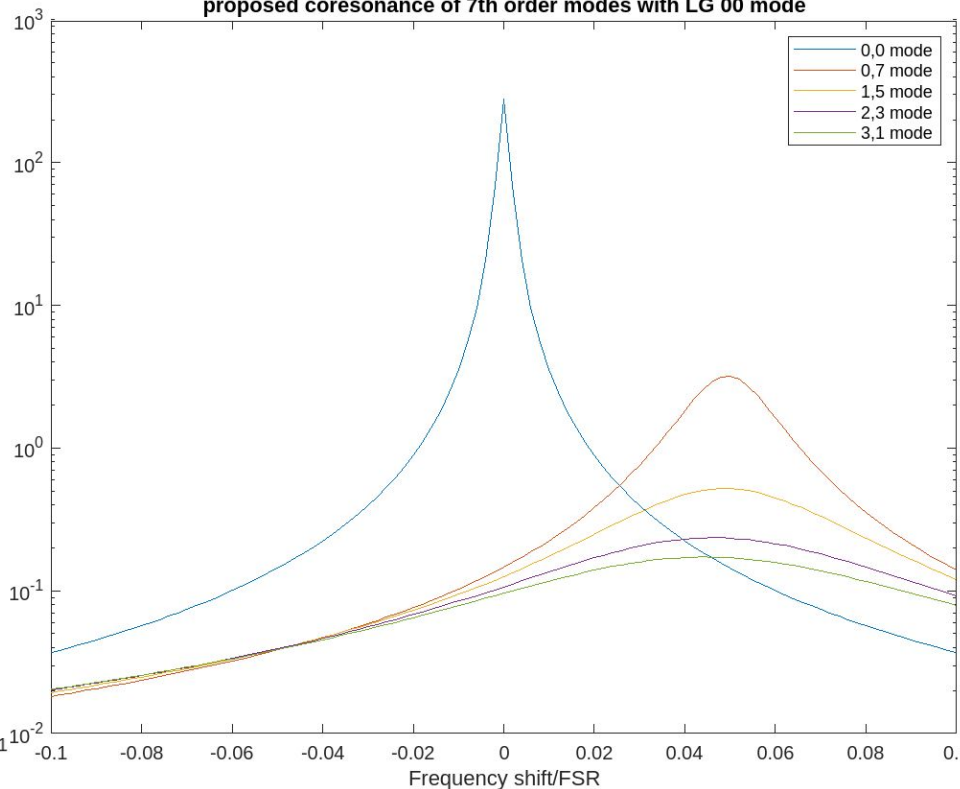
Arm power 400 kW

proposed coresonance of 7th order modes with LG 00 mode



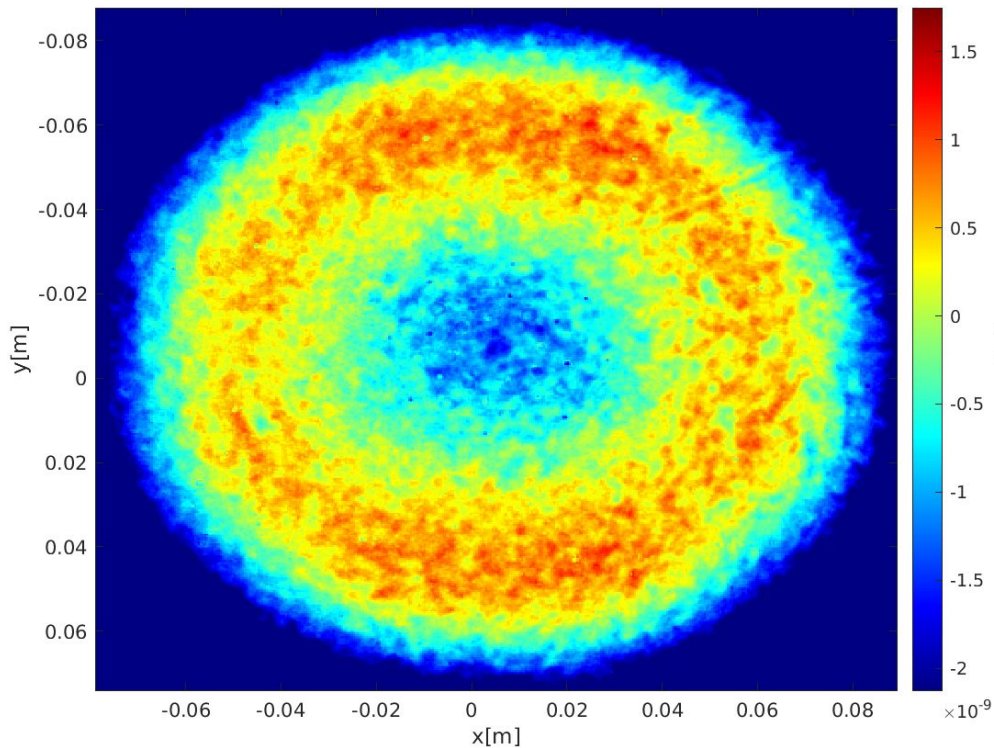
Arm power 750 kW

proposed coresonance of 7th order modes with LG 00 mode

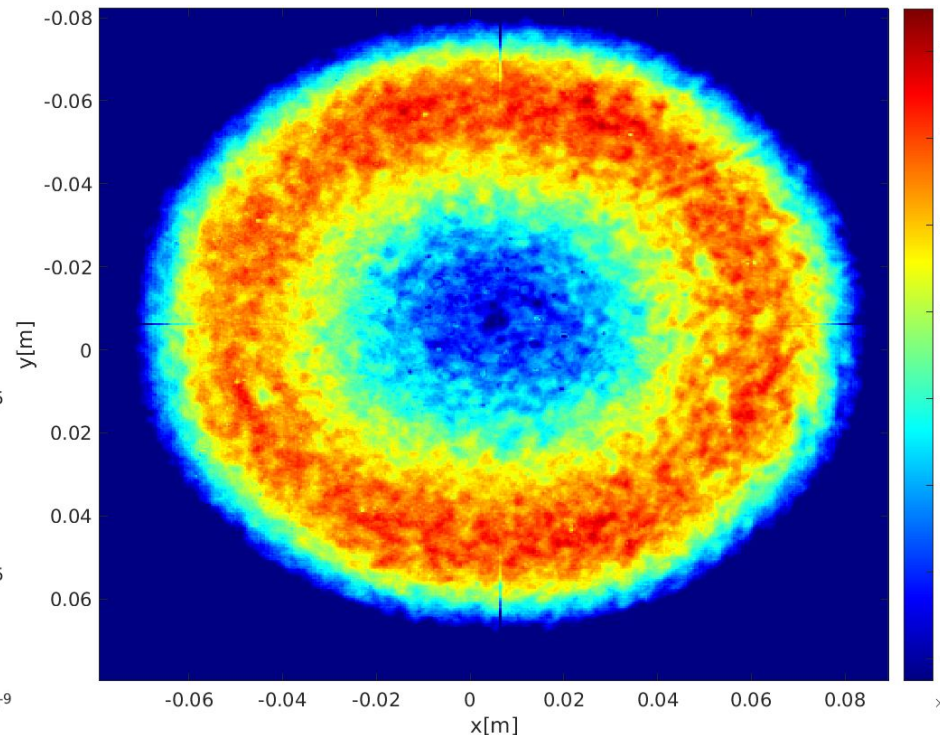


Normal mirror map vs after FROSTI

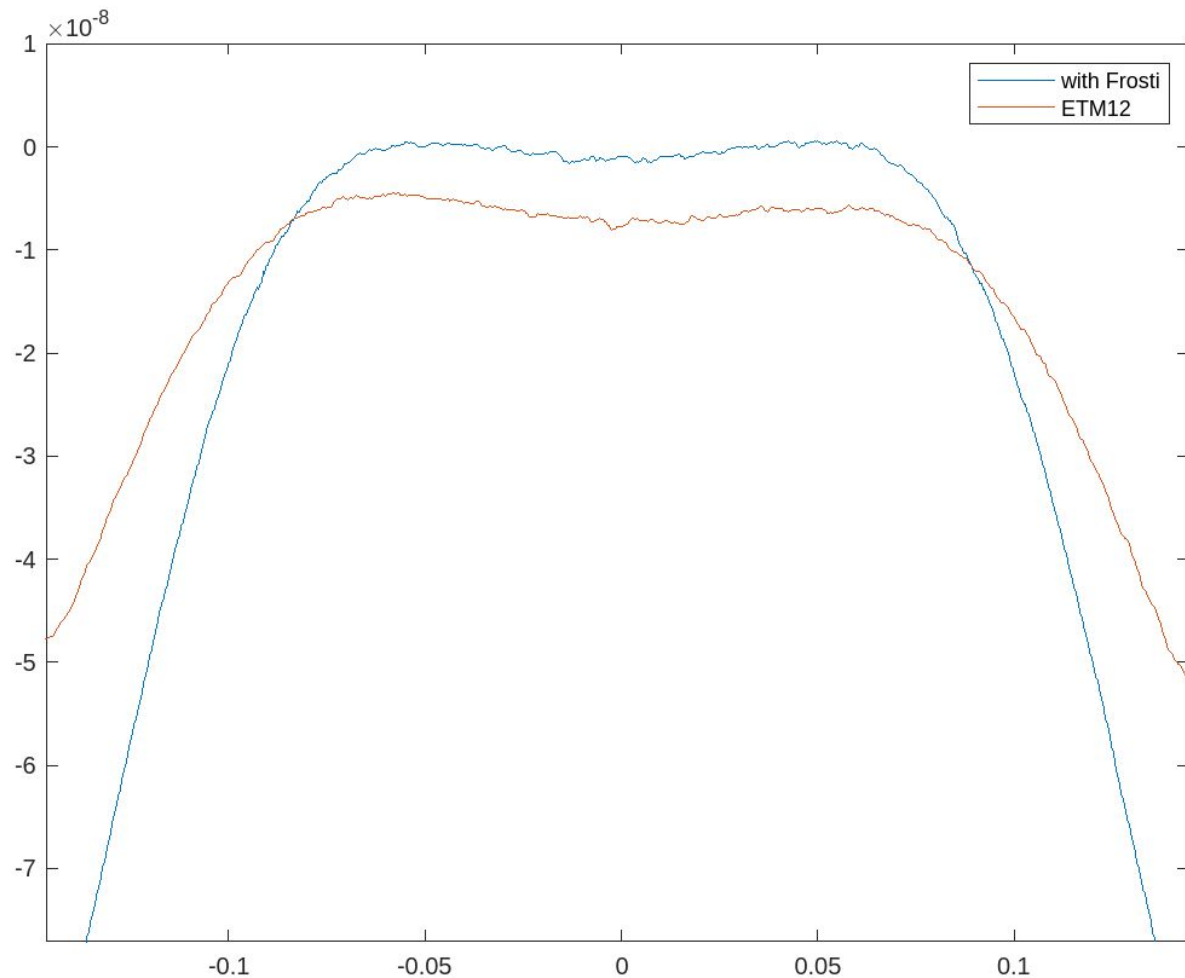
Without FROSTI (ETM12)



With the effect of FROSTI



Radius vs Height comparison

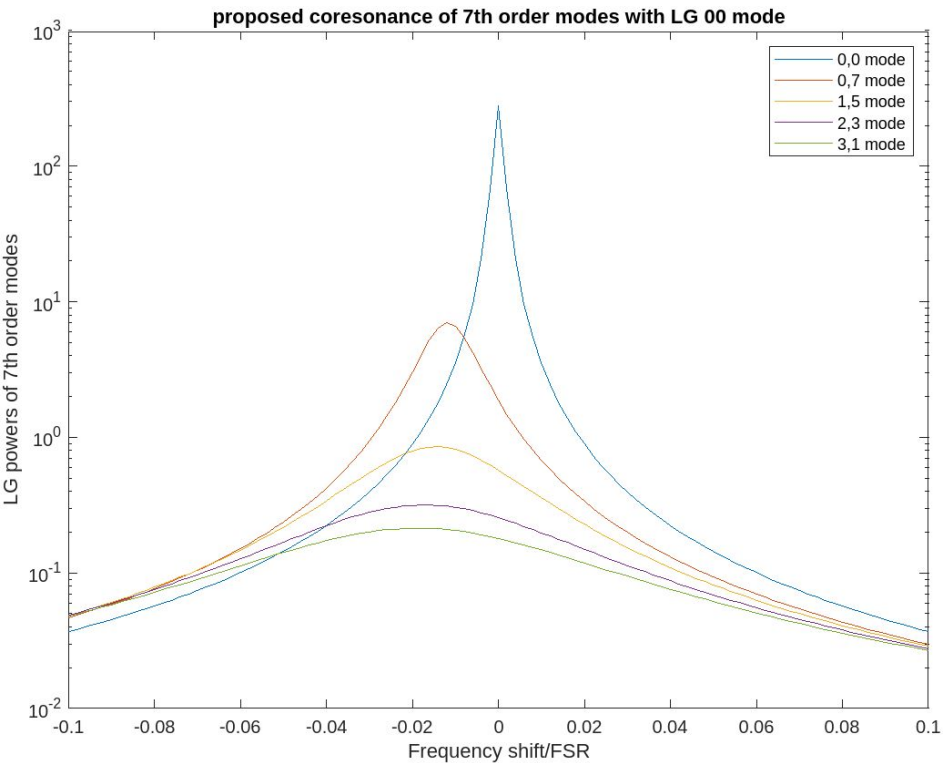


Steps to add FROSTI data to mirror data

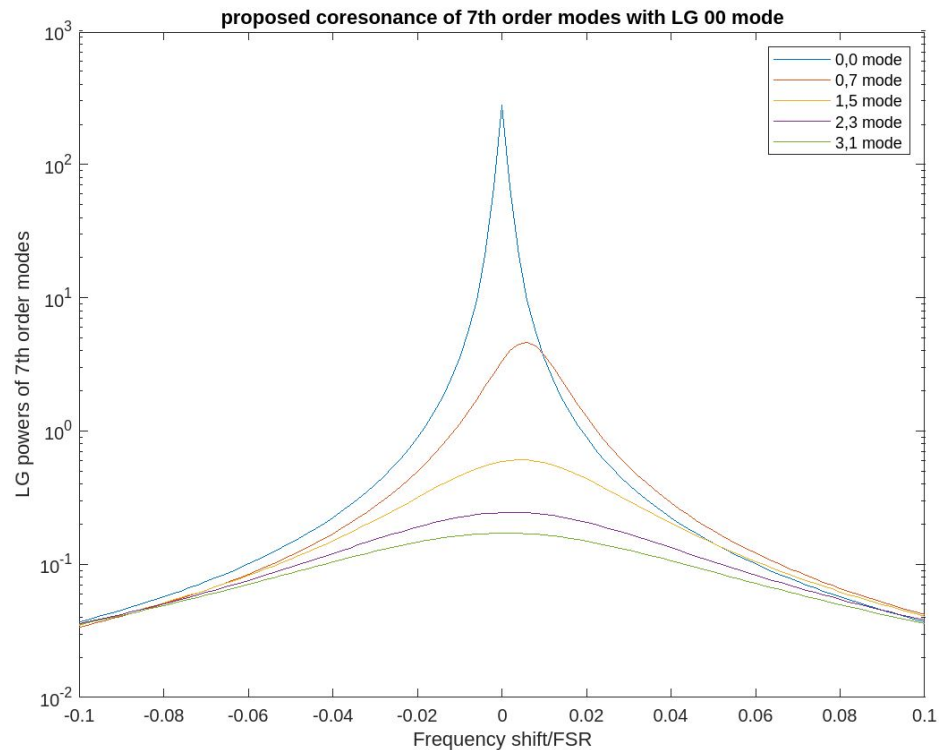
1. Apply the scaling factor to the FROSTI data based on absorbed power
2. Rescale the data matrix obtained from the FROSTI effect data, since it has a very different dimension and size as the data matrix obtained from the mirror map data, and I assume that in reality, the FROSTI will mostly affect near the outer edge of the test mass, so it should have about the same size as the mirror.
3. To prevent the area out of the FROSTI effects (the dark blue areas outside of the circle in the figure in the first slide) that is NaN when converted to a data matrix from interfering with parts of the mirror map data that are numbers, all NaN data in the FROSTI data file are converted to 0, since those areas are out of the FROSTI effect range and will have 0 impact on the test mass.
4. Numerically add the FROSTI effect data to mirror map data and use it for cavity scans

ETM12 and ETM 12 low absorption

Arm power 400 kW

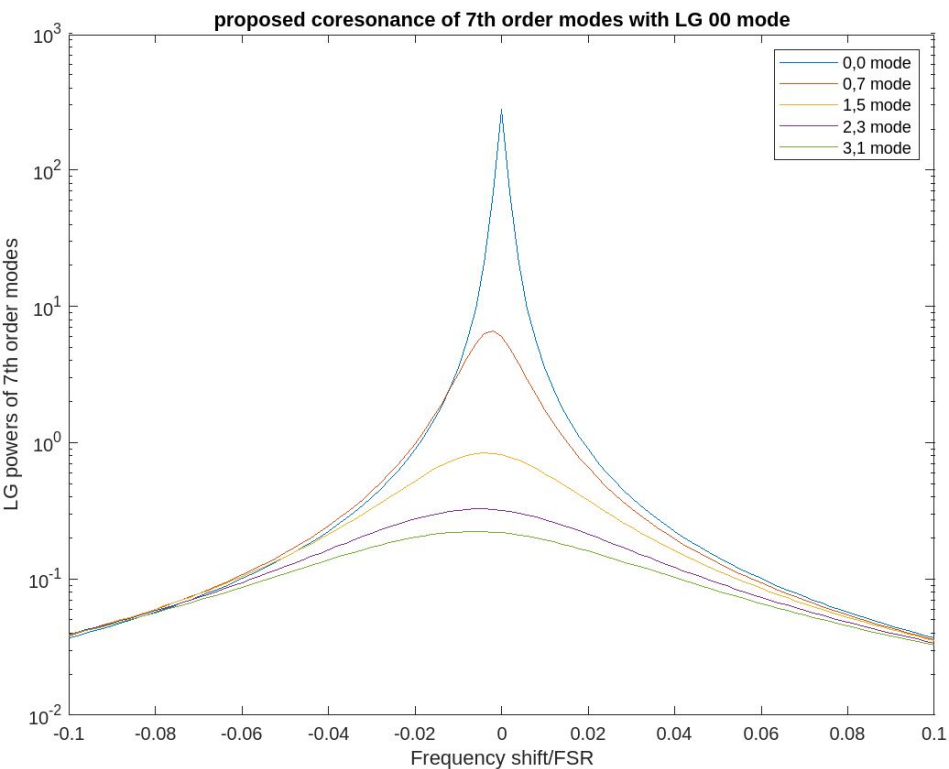


Arm power 750 kW

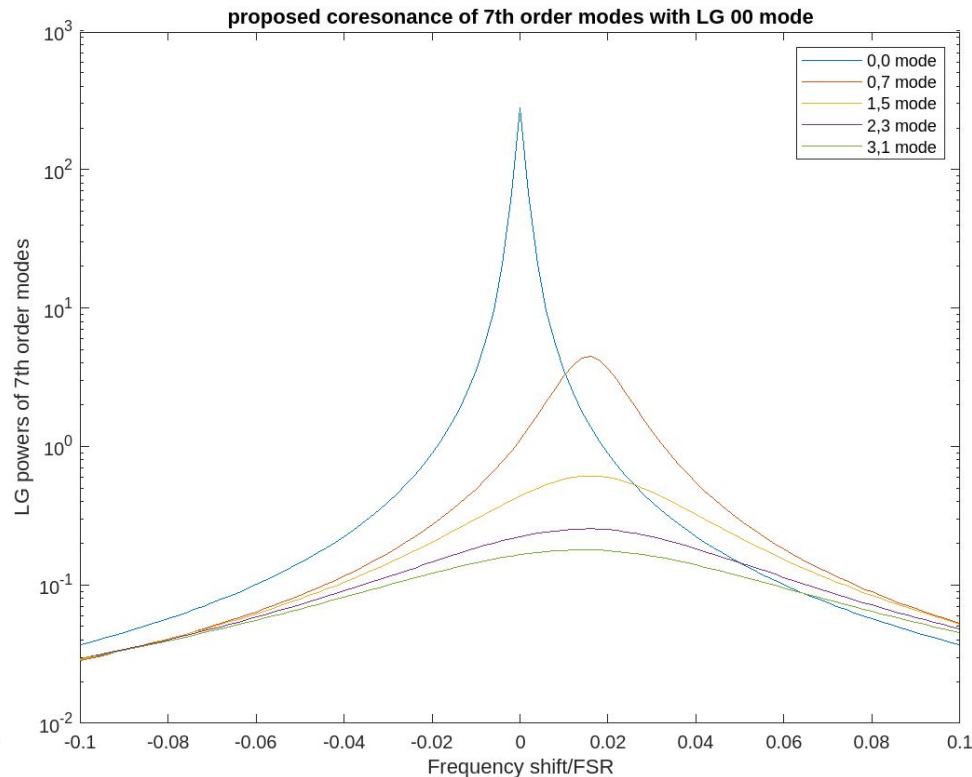


ITM plume guess and ETM12 low absorption

Arm power 400 kW



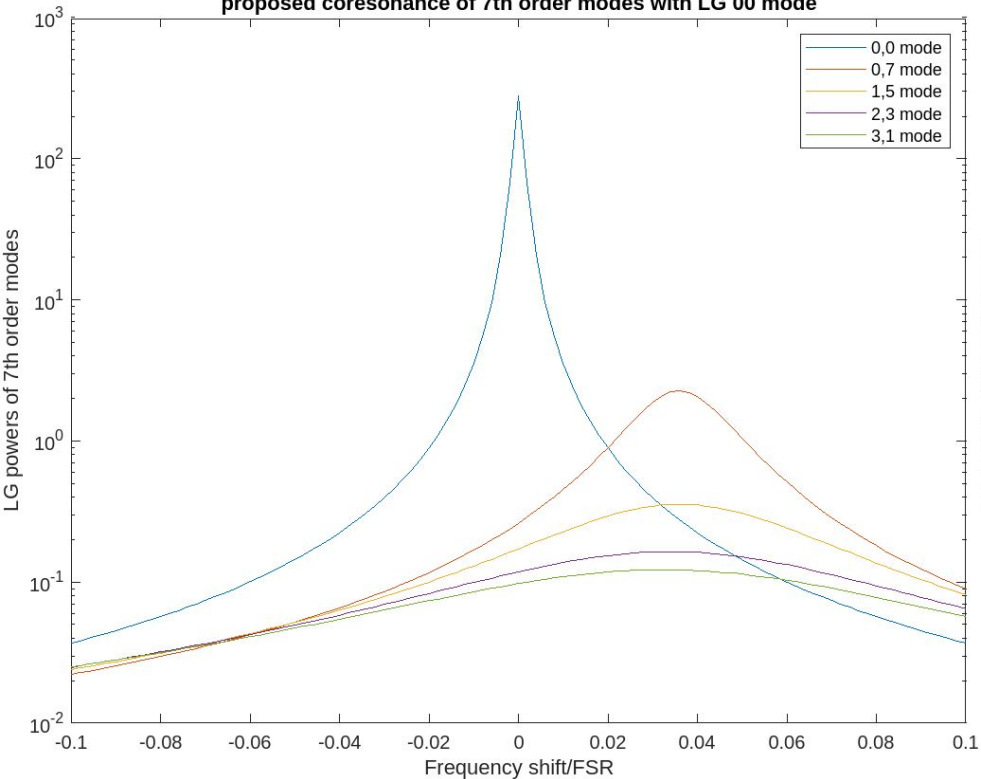
Arm power 750 kW



ETM12 and ETM12 high absorption

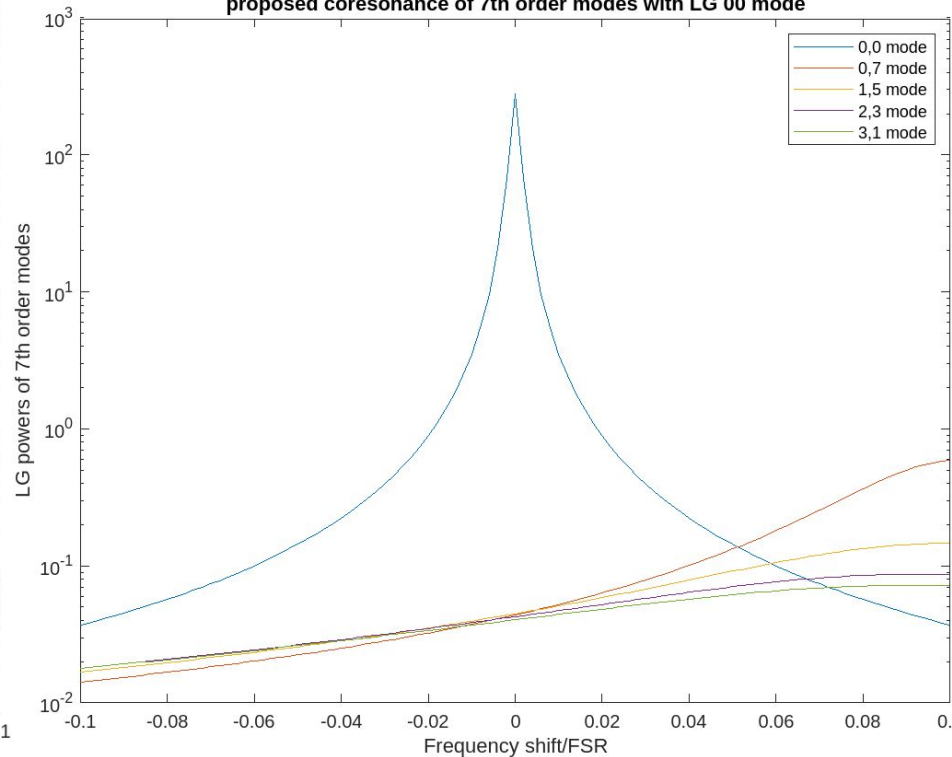
Arm power 400 kW

proposed coresonance of 7th order modes with LG 00 mode



Arm power 750 kW

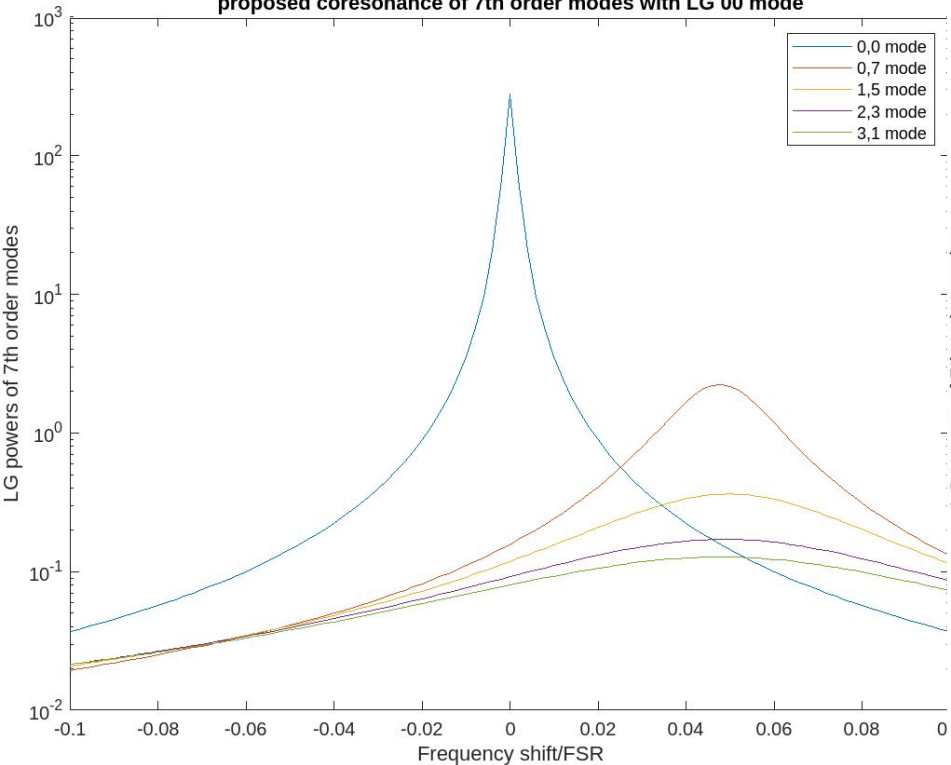
proposed coresonance of 7th order modes with LG 00 mode



ITM plume guess ETM12 high absorption

Arm power 400 kW

proposed coresonance of 7th order modes with LG 00 mode



Arm power 750 kW

proposed coresonance of 7th order modes with LG 00 mode

