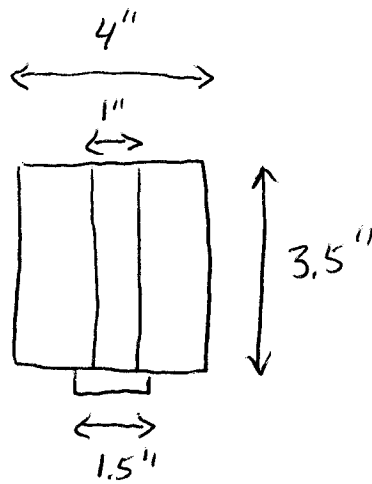

New Folder Name MODE Shapes

Mode Shapes of Fused Silica Test Mass

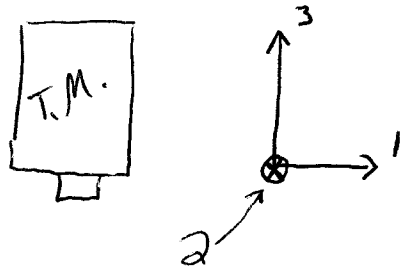
11/1a/a1

Lisa Solvers

Size of mass:



Coordinate system used in following plots for mode shapes:



Sij's Measurements

Abaqus Model

18.675 K	18.977 K
20.15 K	20.817 K
—	21.006 K
~23 K	23.636 K
~25 K	25.292 K
27.375 K	27.52 K
27.7	28.187 K
28.69	29.386

- 3 different orientations were plotted for each mode

- 1) side view of test mass + mirror
- 2) view down the optic axis of the test mass + mirror
- 3) side view of mirror alone

- Things to note for interpreting plots

- 1) magnification factor was different for each plot and is listed on the plot
- 2) The generalized masses (amount of total mass participating in the particular mode) should be the same for eigenvalues that are complex conjugates of one another (i.e. $j18.977 \text{ KHz}$ and $-j18.977 \text{ KHz}$). I want to flag that this was not the case for the 18.977 KHz or 20.817 KHz modes. I am uncertain as to the effect this has on the mode shape and am hoping very little effect. With more work this effect could be investigated but presently will be left as it is. I do have some confidence in the present results ~~and~~ since the complex conjugate mode shapes appeared identical even though the generalized masses were different.