

T1000734-v4

FEA of FM / BS applied to 5 chambers
WBSC2, WBSC4, LBSC2
WBSC7 and WBSC8

Refer to the other pdf associated with this DCC
number with proposed layouts for difference
and similarities between these chambers

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Original struts versus Lab struts and BSC8 proposed struts

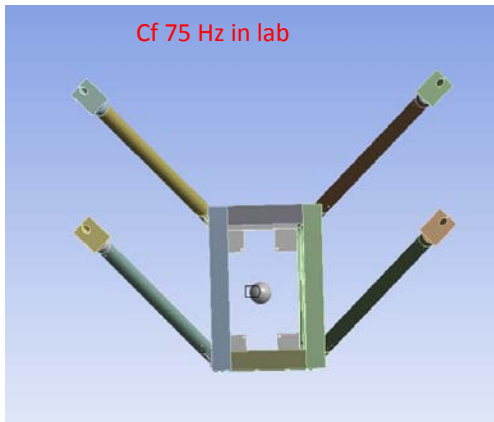
Both original strut and lab struts have been looked at in the lab and although lower in freq than FEA results below they are comparable to each other as per the 2 results below

This set has not been modelled in the lab

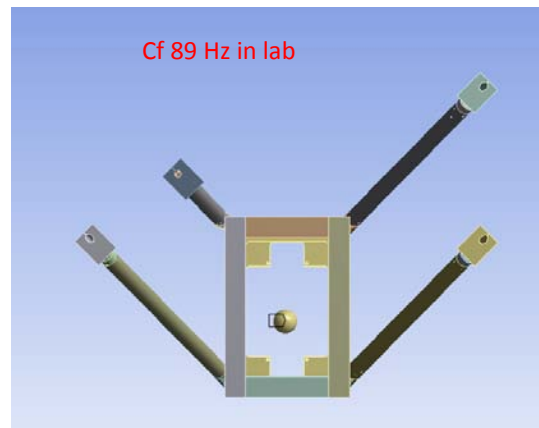
- 1) $f_1=109$ Hz (FMBS with RAL original struts + 8kg non-sus mass)
- 2) $f_1=124$ Hz (FMBS with RAL original struts + no non-sus mass)

- 5) $f_1 = 113$ Hz (FMBS with lab struts struts + 8kg non-sus mass)
- 6) $f_1 = 127$ Hz (FMBS with lab struts + no non-sus mass)

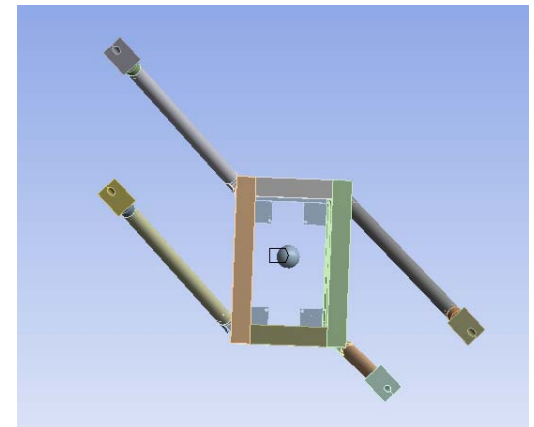
- 3) $f_1 = 84$ Hz (FMBS with modified RAL struts (BSC8) + 8kg non-sus mass)
- 4) $f_1 = 93$ Hz (FMBS with modified RAL struts (BSC8) + no non-sus mass)



Original struts



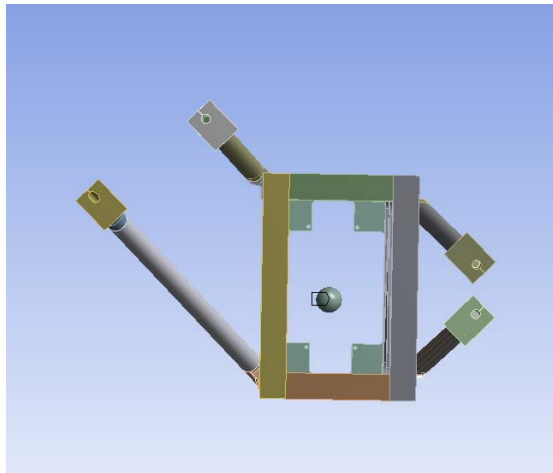
Lab struts



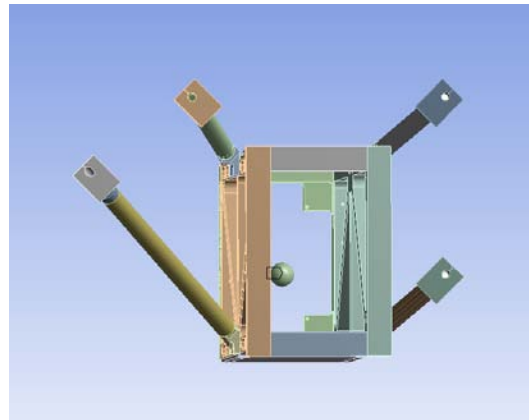
BSC8

Further cases in FEA (for BSC8)

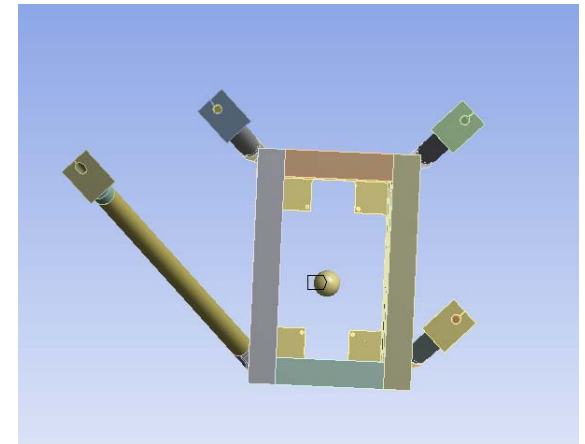
- Possible BSC8 layout with non sus mass
- $f_1 = 96 \text{ Hz}$



- Possible BSC8 layout with non sus mass
- $f_1 = 111 \text{ Hz}$

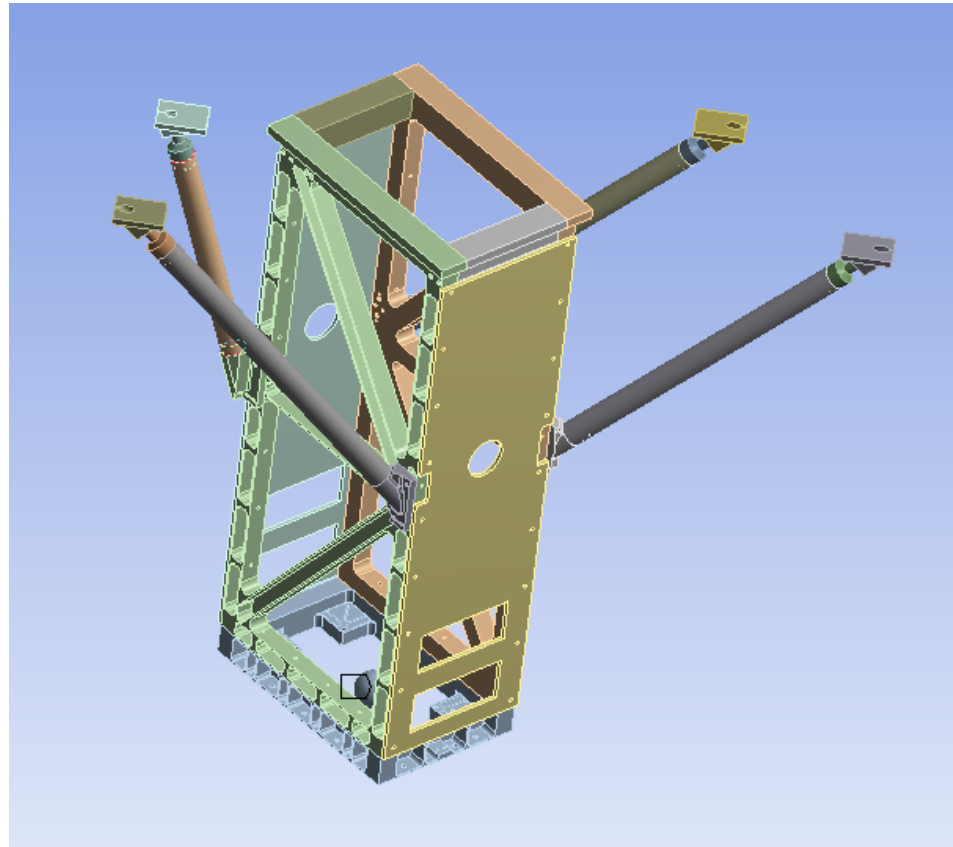


- Possible BSC8 layout with non sus mass and 14 deg angle struts this one fits in the chamber
- $f_1 = 106 \text{ Hz}$



Windows in the face plates

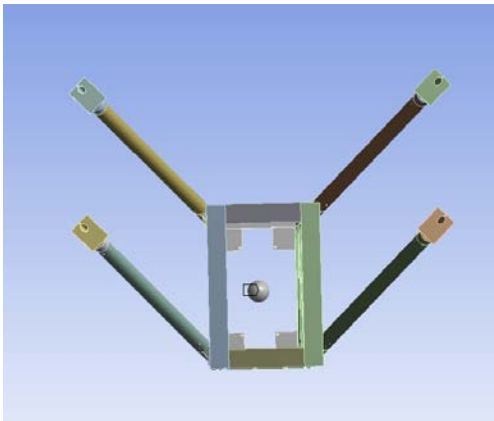
- Running several different cases we only observed a change in frequency of the order 1 Hz (reduction) with the addition of windows as shown



BSC 2 again

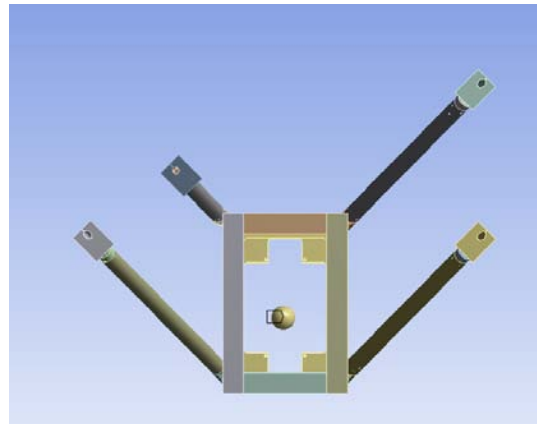
1) $f_1=109$ Hz (FMBS with RAL original struts + 8kg non-sus mass)

2) $f_1=124$ Hz (FMBS with RAL original struts + no non-sus mass)

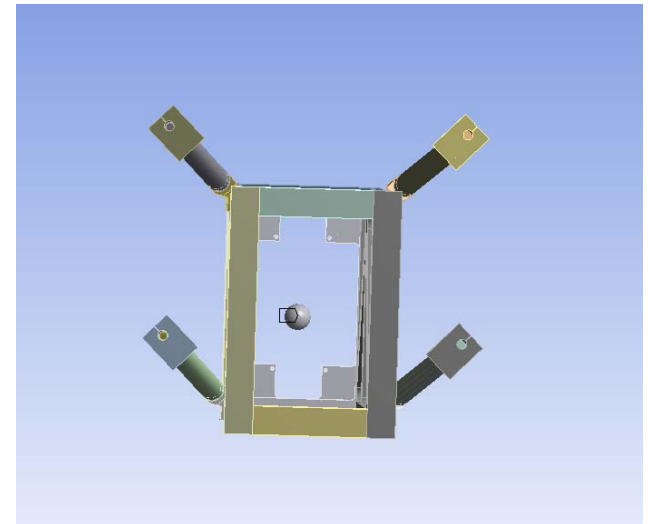


5) $f_1 = 113$ Hz (FMBS with lab struts struts + 8kg non-sus mass)

6) $f_1 = 127$ Hz (FMBS with lab struts + no non-sus mass)



7) $f_1 = 110$ Hz (FMBS with 4 short struts struts + 8kg non-sus mass)



NEED TO LOOK AT BSC2L, BSC4H and BSC2H again ...