





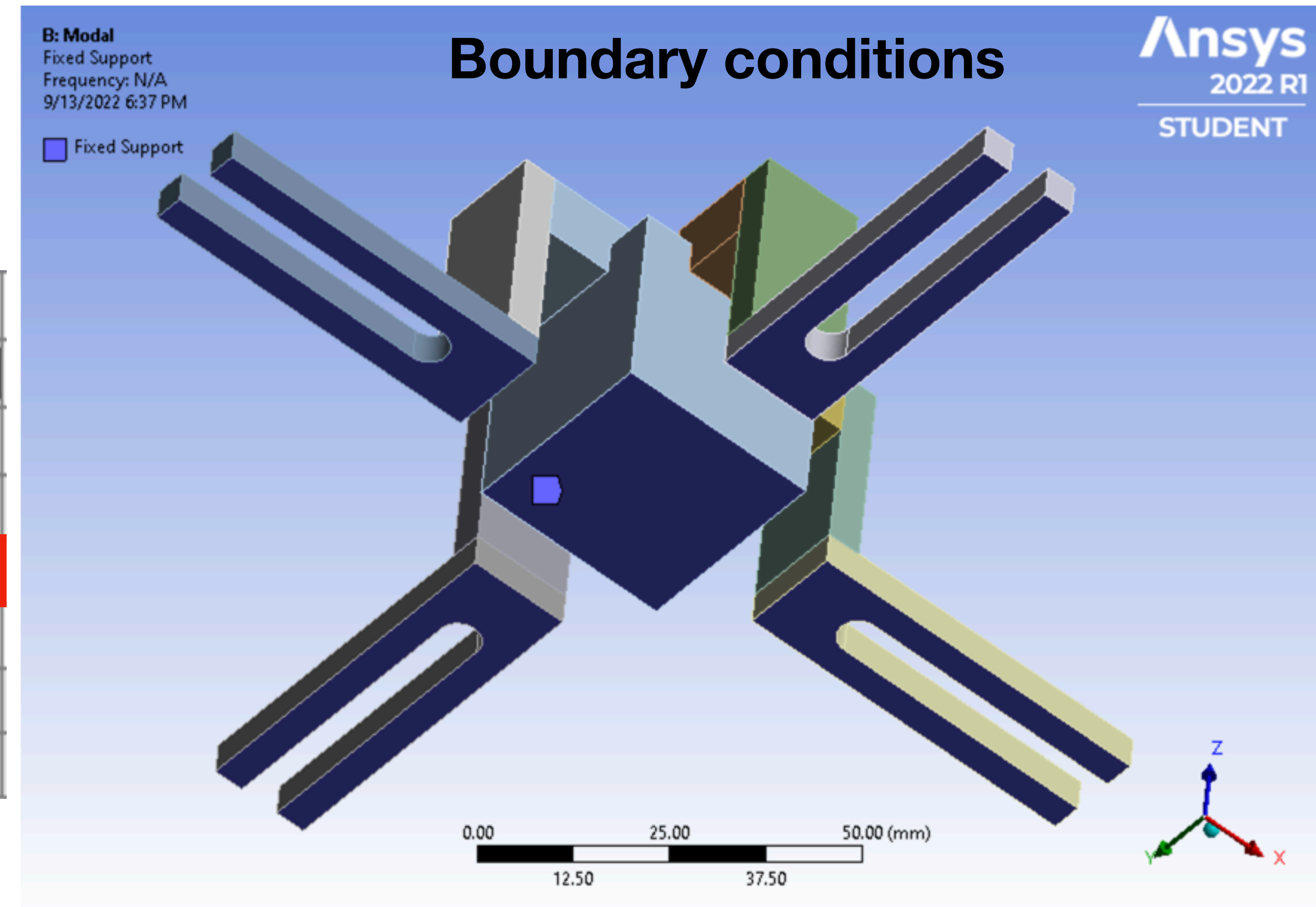
# **LYSO cristal + PD mechanical test**

**Preliminary FEM simulation and results**

# FEM model setup and LYSO properties

## LYSO properties

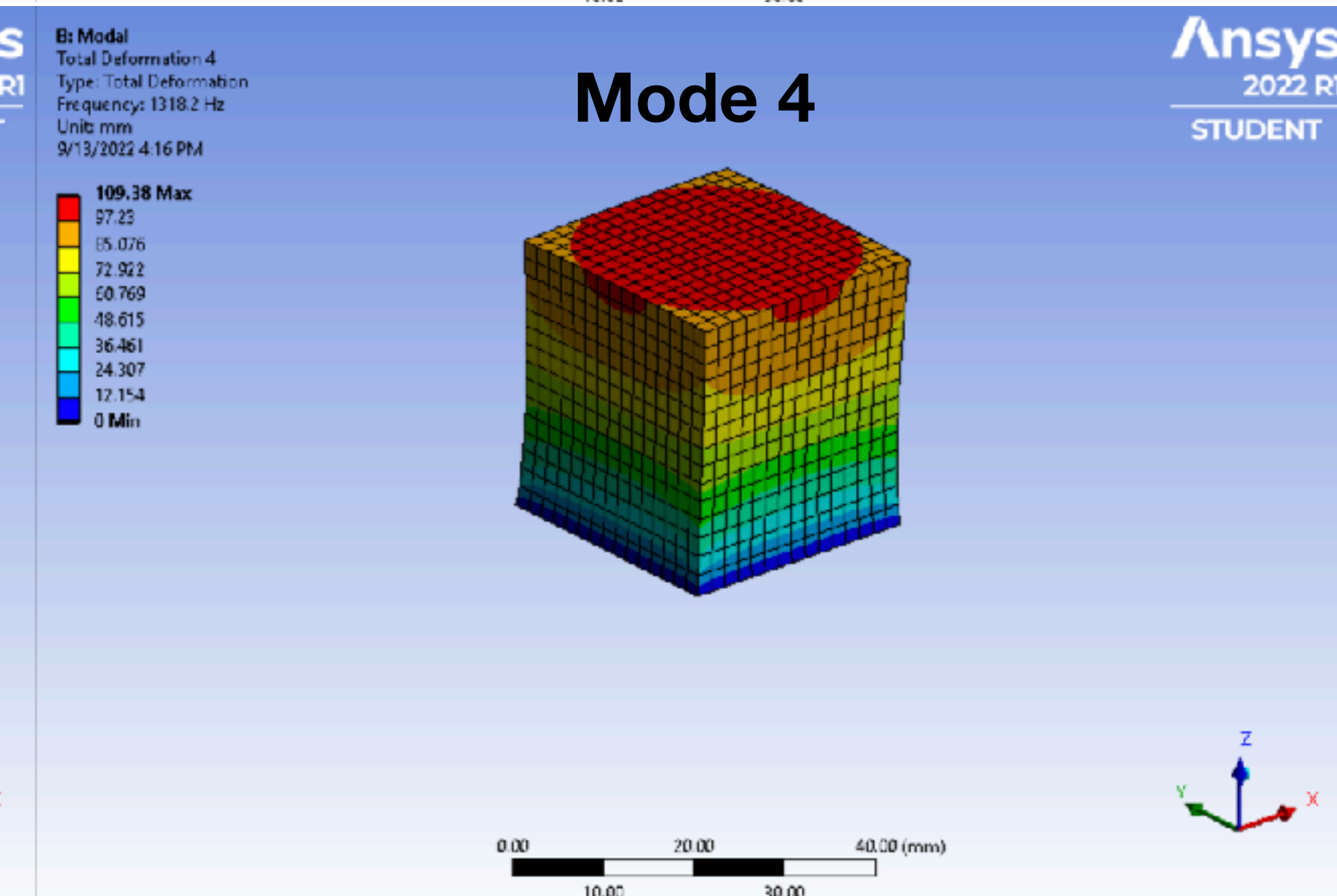
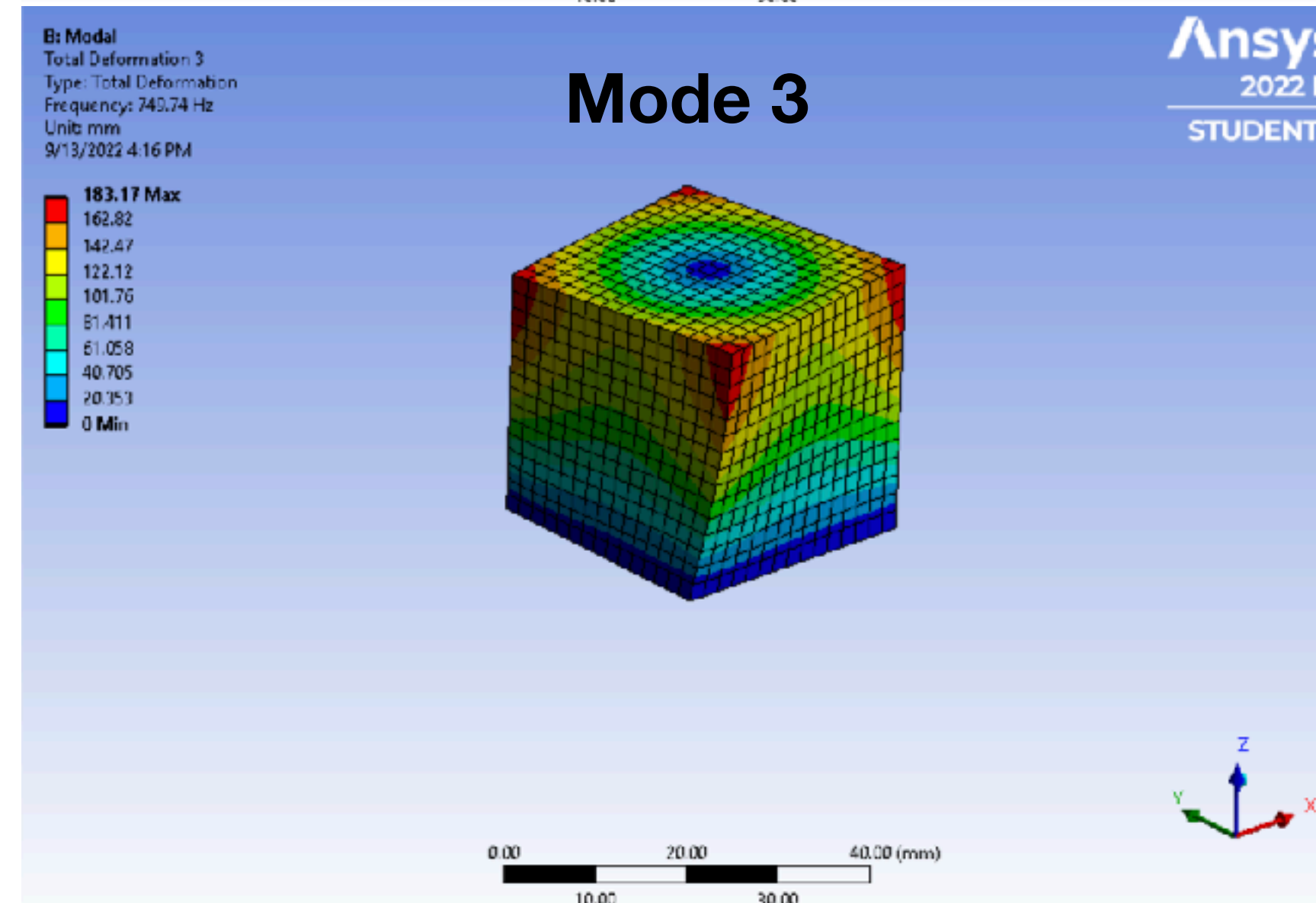
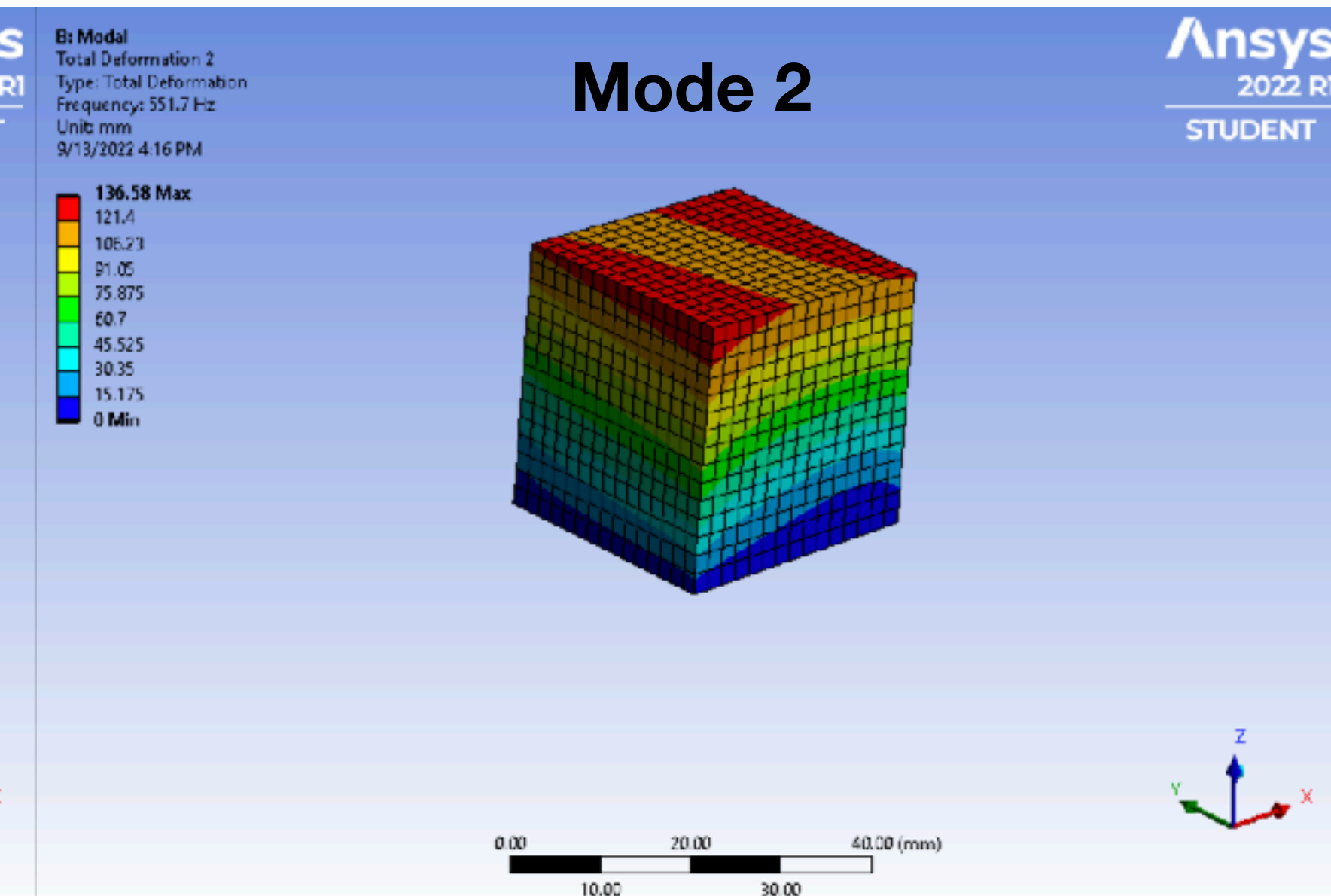
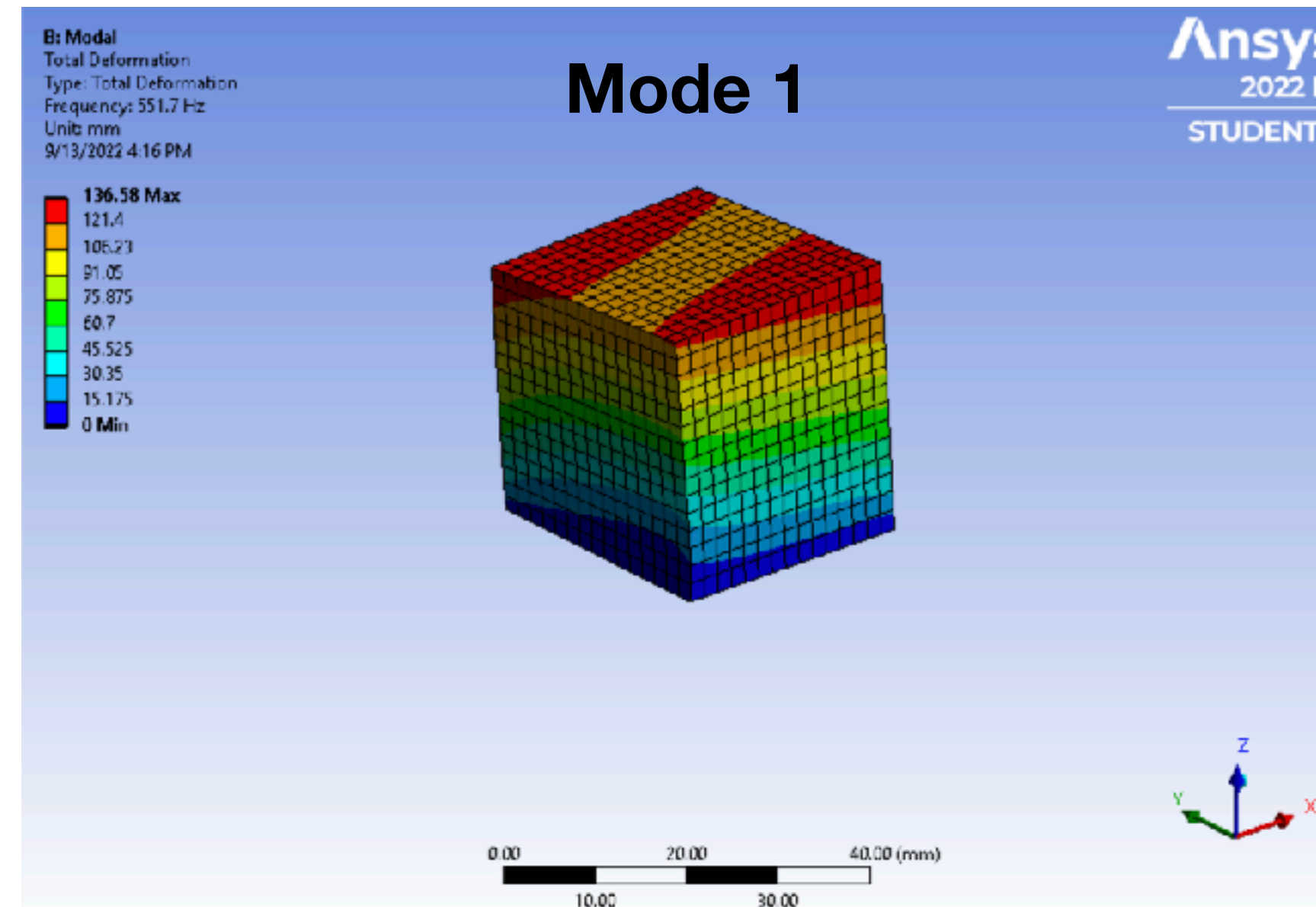
2	 Material Field Variables	 Table	
3	 Density	7.1	g cm <sup>-3</sup>
4	 Isotropic Elasticity		
5	Derive from	Young's...	
6	Young's Modulus	172*	MPa
7	Poisson's Ratio	0.3	
8	Bulk Modulus	1.4333E+08	Pa
9	Shear Modulus	6.6154E+07	Pa



\* Ref. <http://dx.doi.org/10.1016/j.nima.2015.02.061>

# FEM modal analysis - LYSO cube only

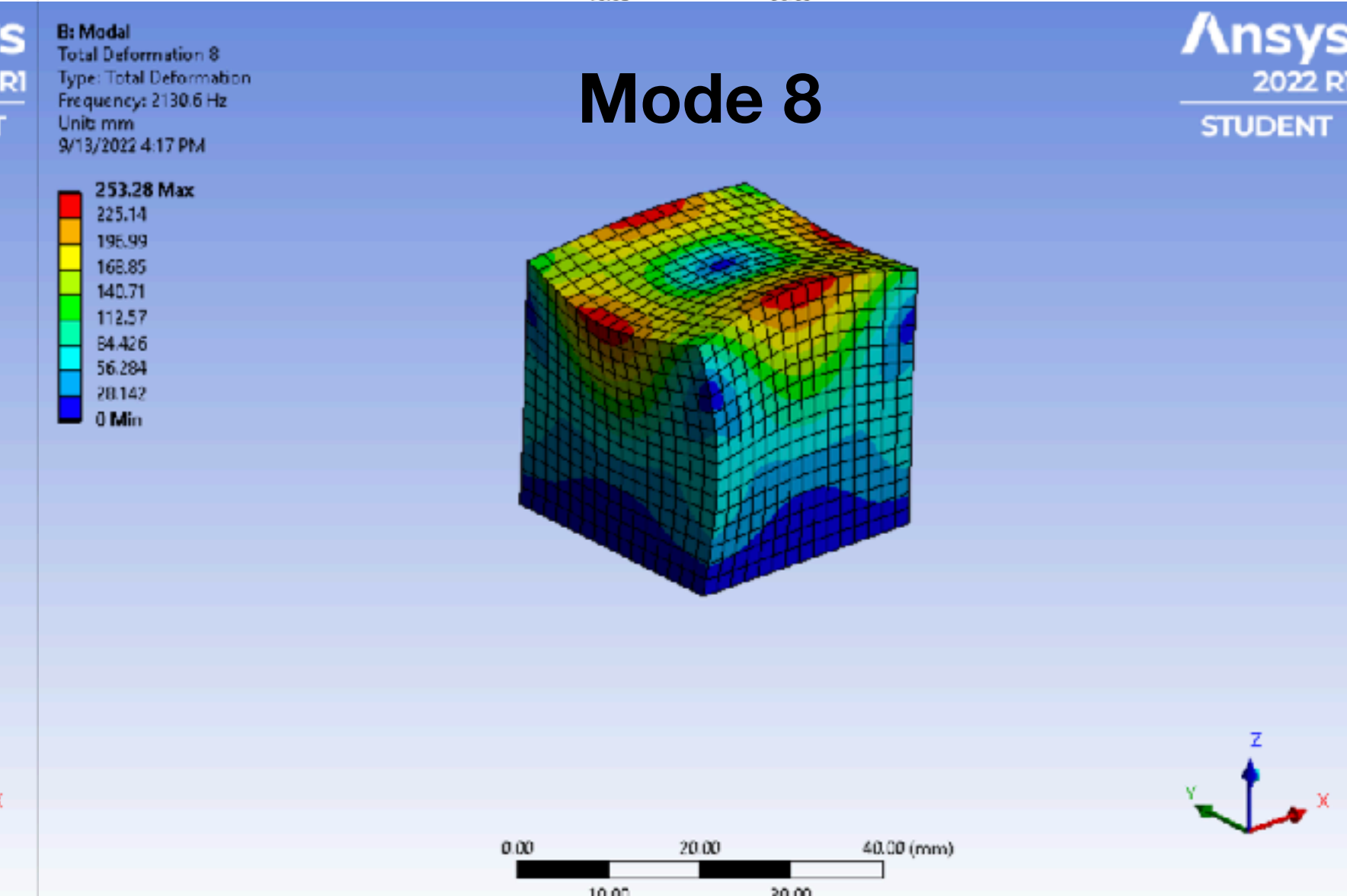
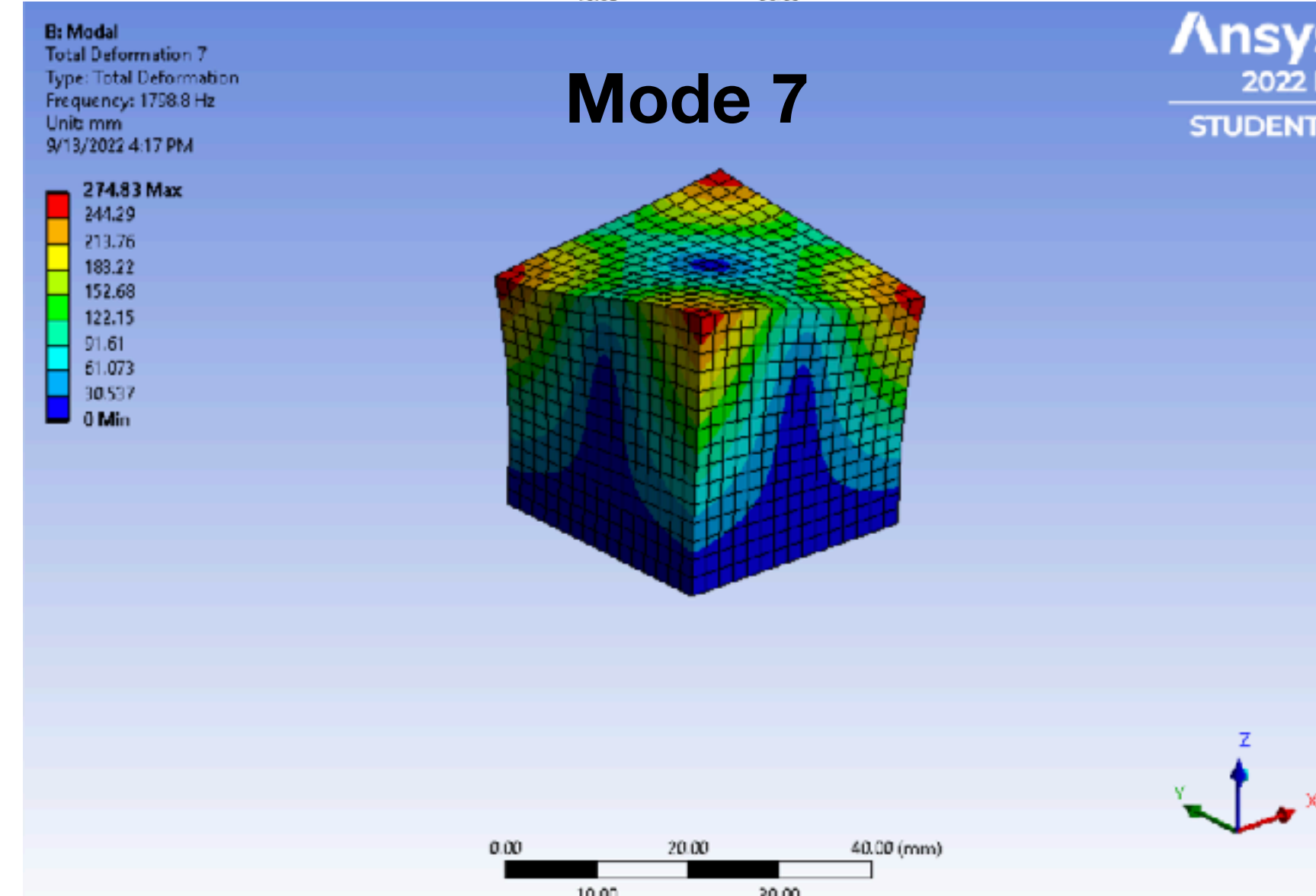
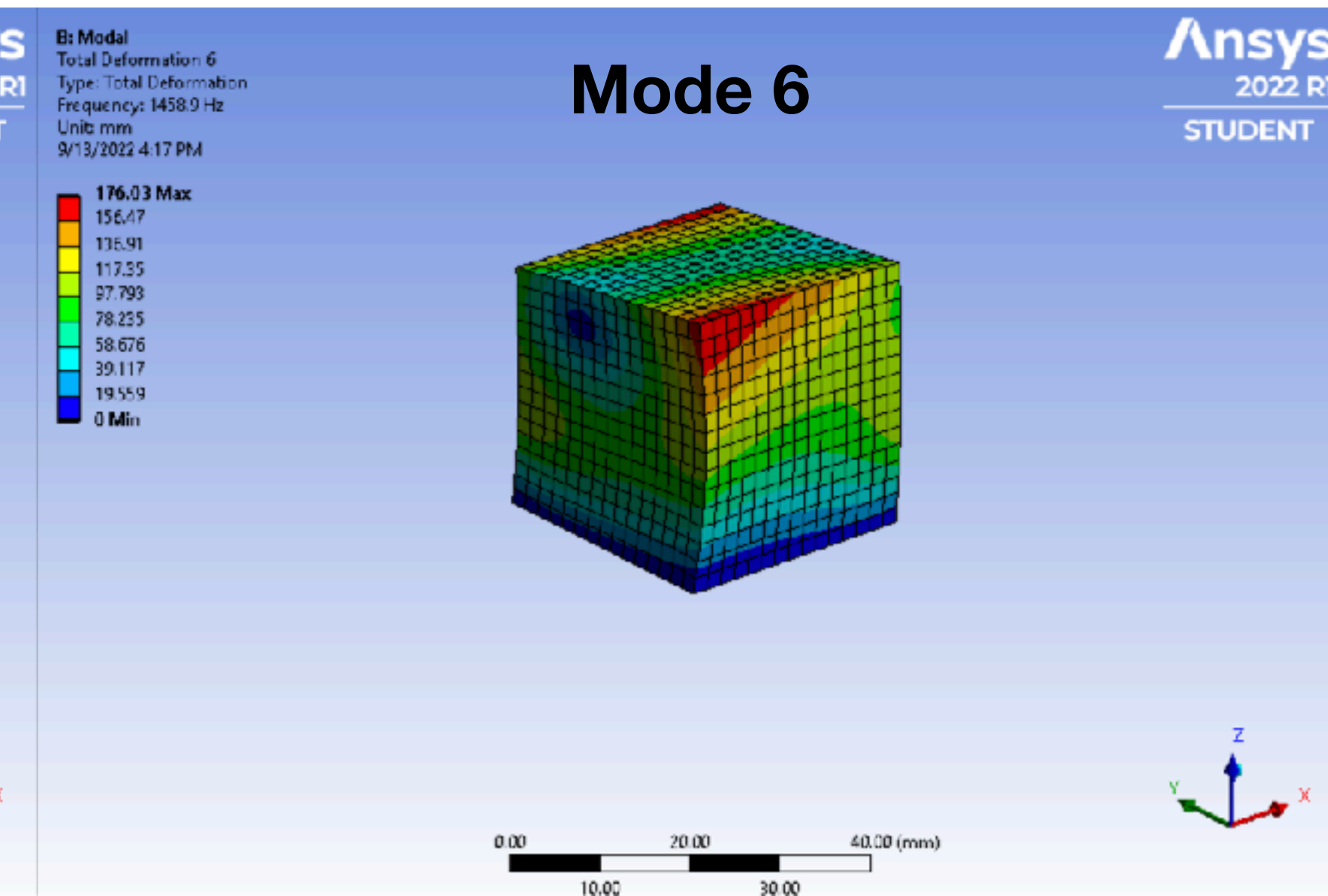
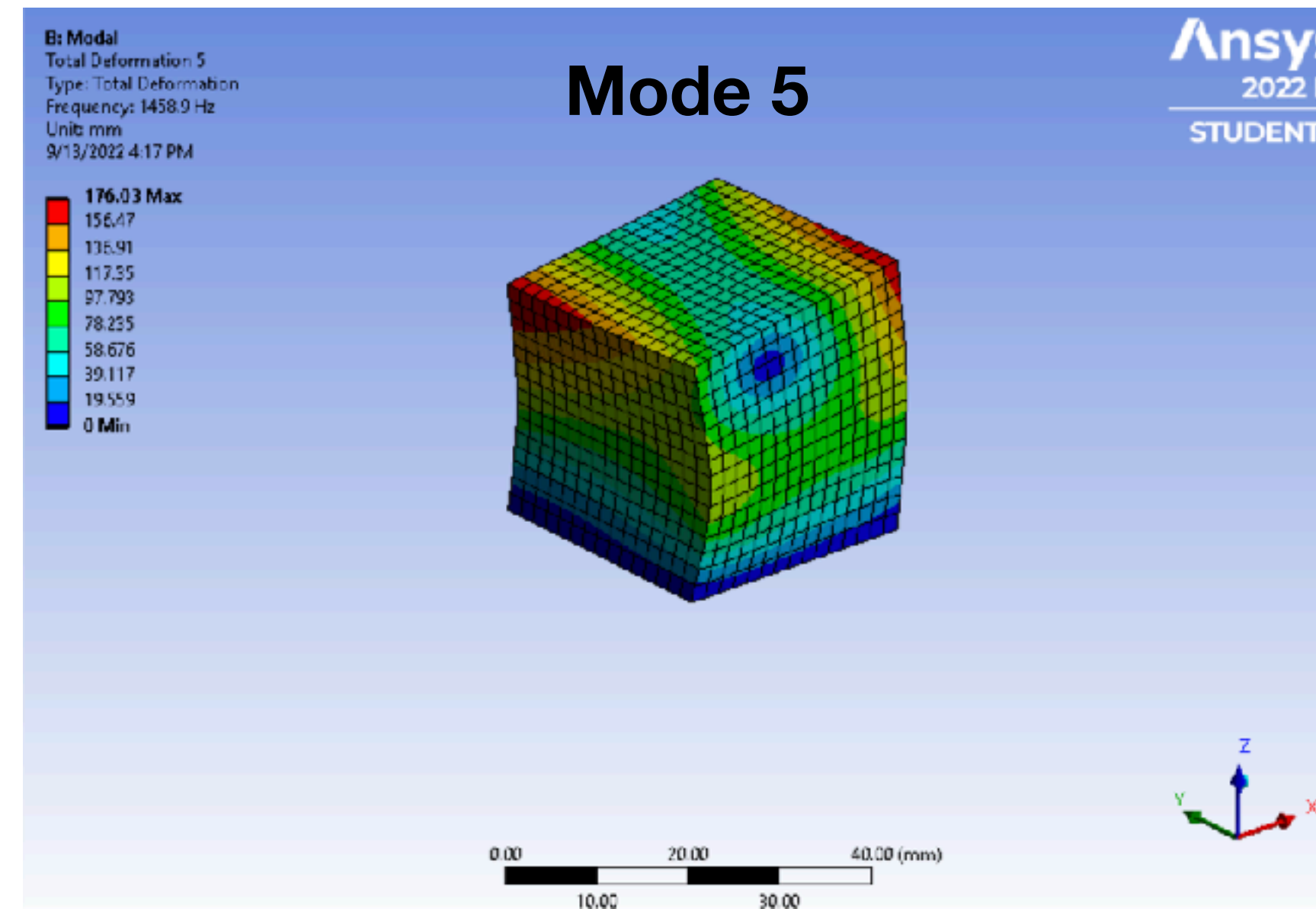
Mode	<input checked="" type="checkbox"/> Frequency [Hz]
1.	551.7
2.	551.7
3.	749.74
4.	1318.2
5.	1458.9
6.	1458.9
7.	1798.8
8.	2130.6
9.	2217.6
10.	2267.6





# FEM modal analysis - LYSO cube only

Mode	<input checked="" type="checkbox"/> Frequency [Hz]
1.	551.7
2.	551.7
3.	749.74
4.	1318.2
5.	1458.9
6.	1458.9
7.	1798.8
8.	2130.6
9.	2217.6
10.	2267.6





# FEM modal analysis - LYSO + structure

Mode	<input checked="" type="checkbox"/> Frequency [Hz]
1.	1232.9
2.	1232.9
3.	1534.3
4.	1636.
5.	2158.3
6.	2158.3
7.	2353.4
8.	2420.9
9.	2551.7
10.	2551.7

