

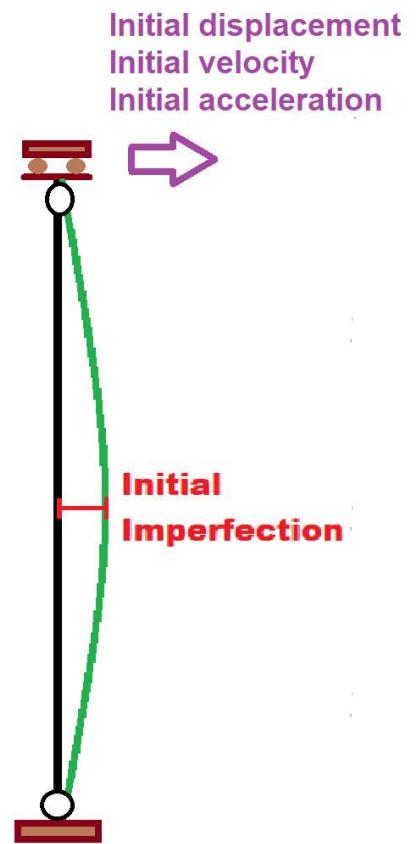
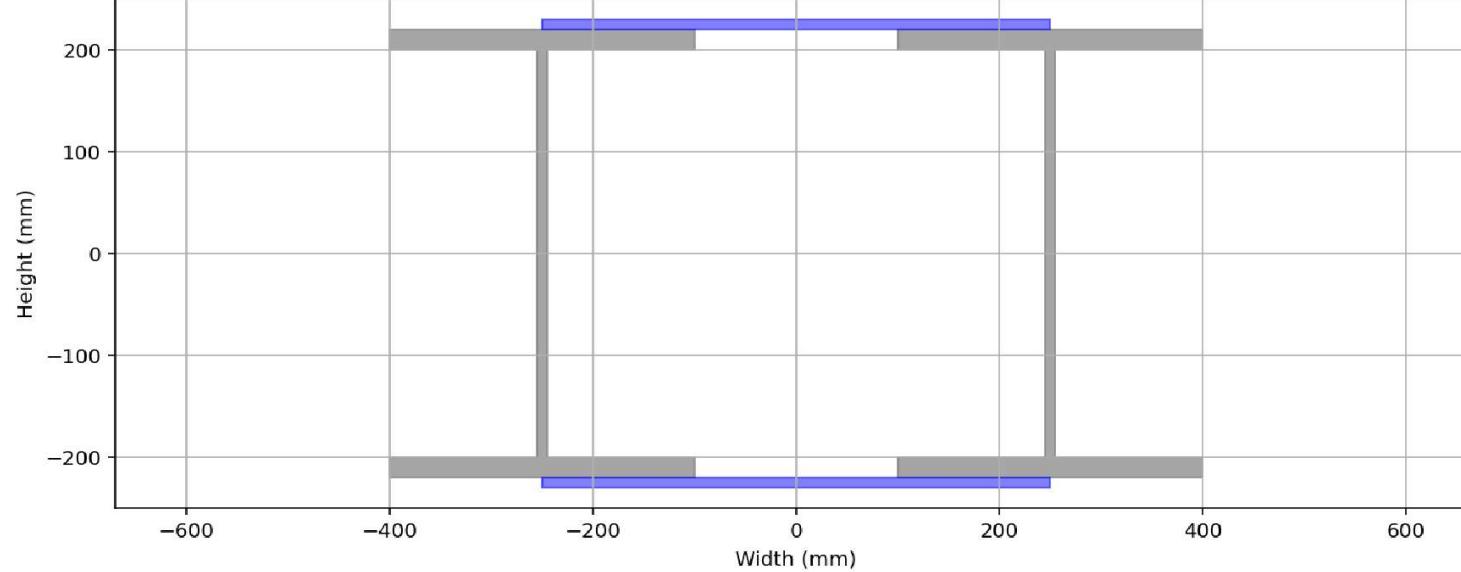
>> IN THE NAME OF ALLAH, THE MOST GRACIOUS, THE MOST MERCIFUL <<

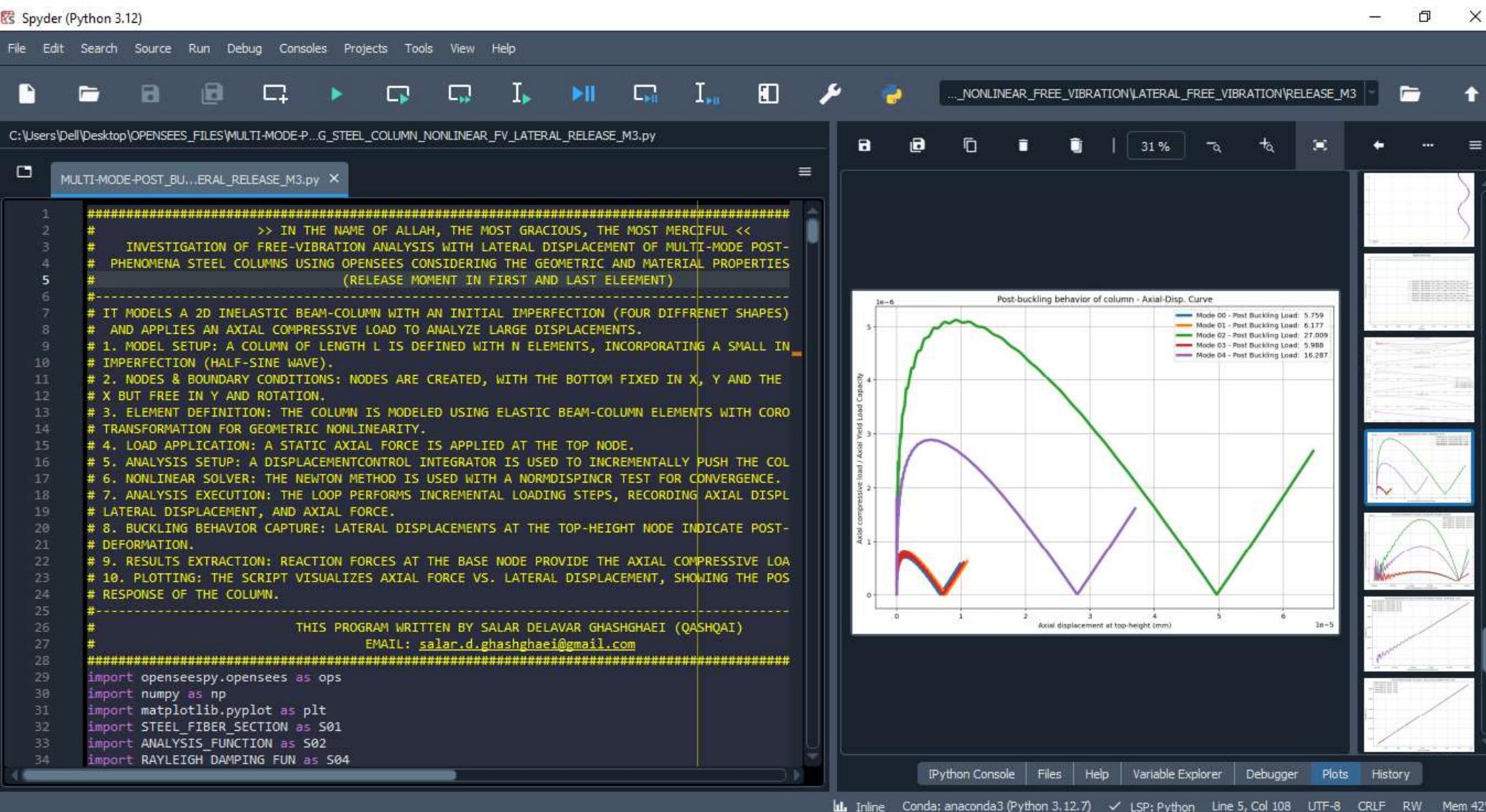
INVESTIGATION OF FREE-VIBRATION ANALYSIS WITH LATERAL DISPLACEMENT OF MULTI-MODE POST- BUCKLING PHENOMENA STEEL COLUMNS USING OPENSEES CONSIDERING THE GEOMETRIC AND MATERIAL PROPERTIES NONLINEARITY (RELEASE MOMENT IN FIRST AND LAST ELEMENT)

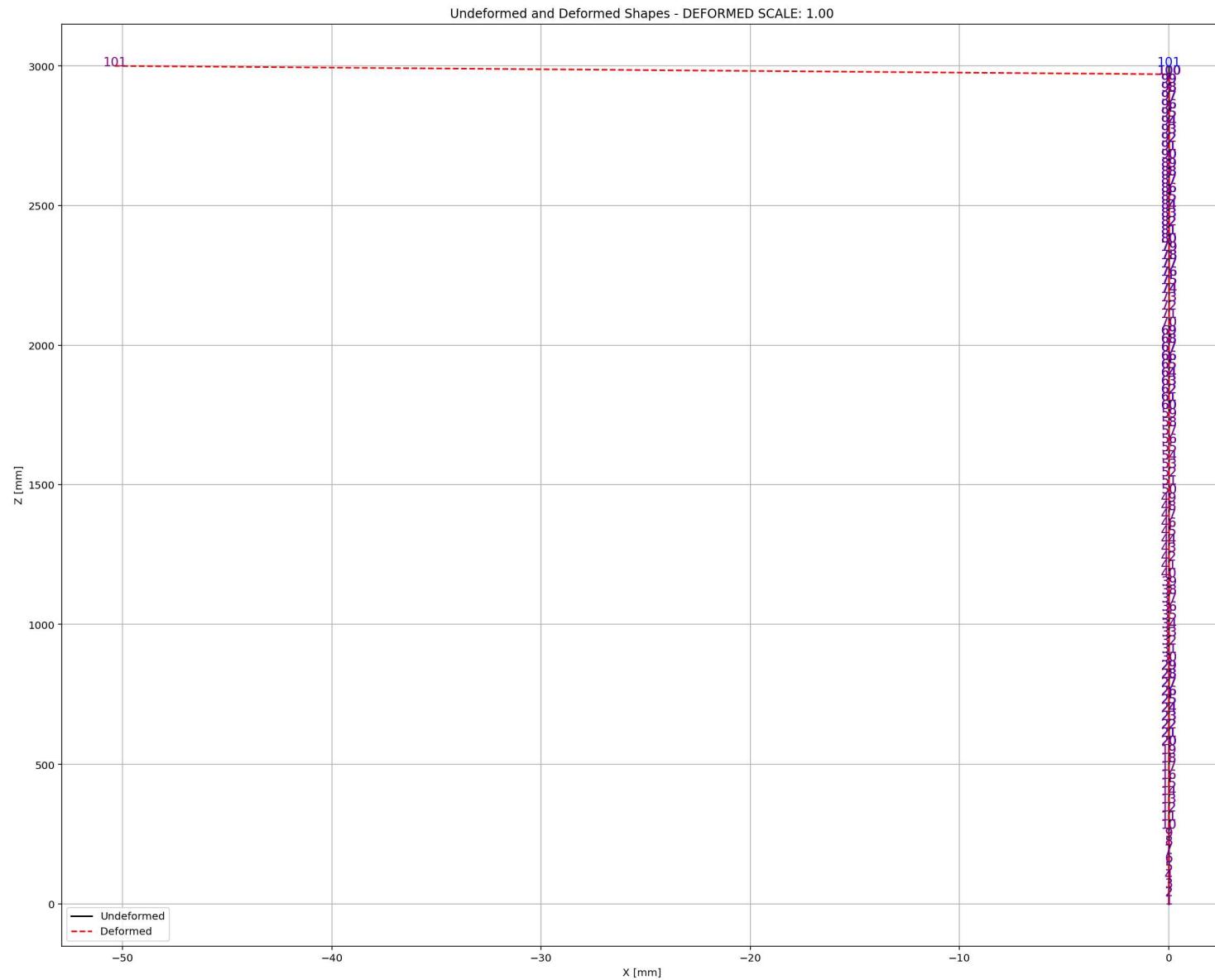
WRITTEN BY SALAR DELAVAR GHASHGHAEI (QASHQAI)

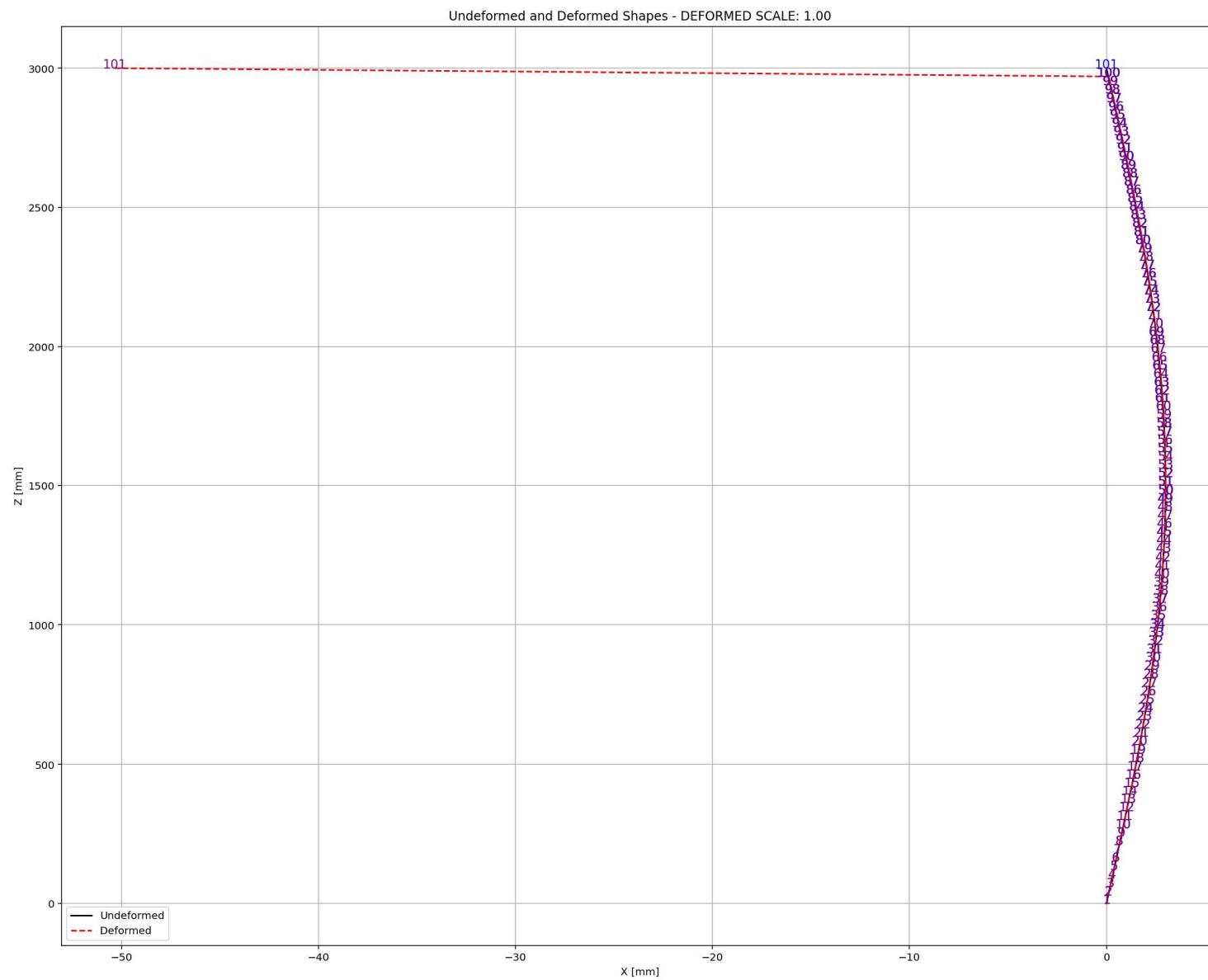
$$\left(\frac{P}{P_y}\right)^2 + \left(\frac{M}{M_y}\right)^2 \leq 1$$

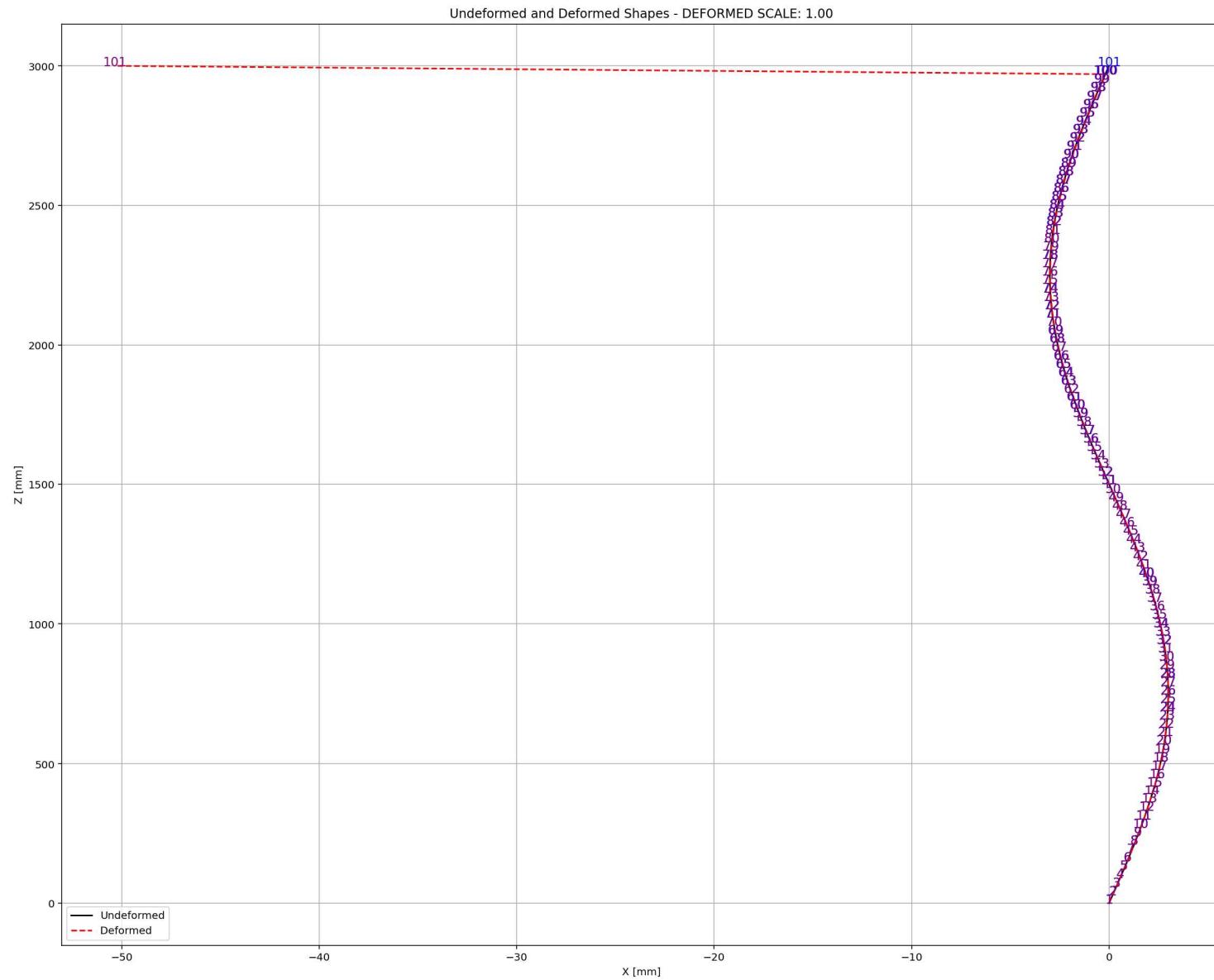
Double I-Section with Plates (10mm×500mm)

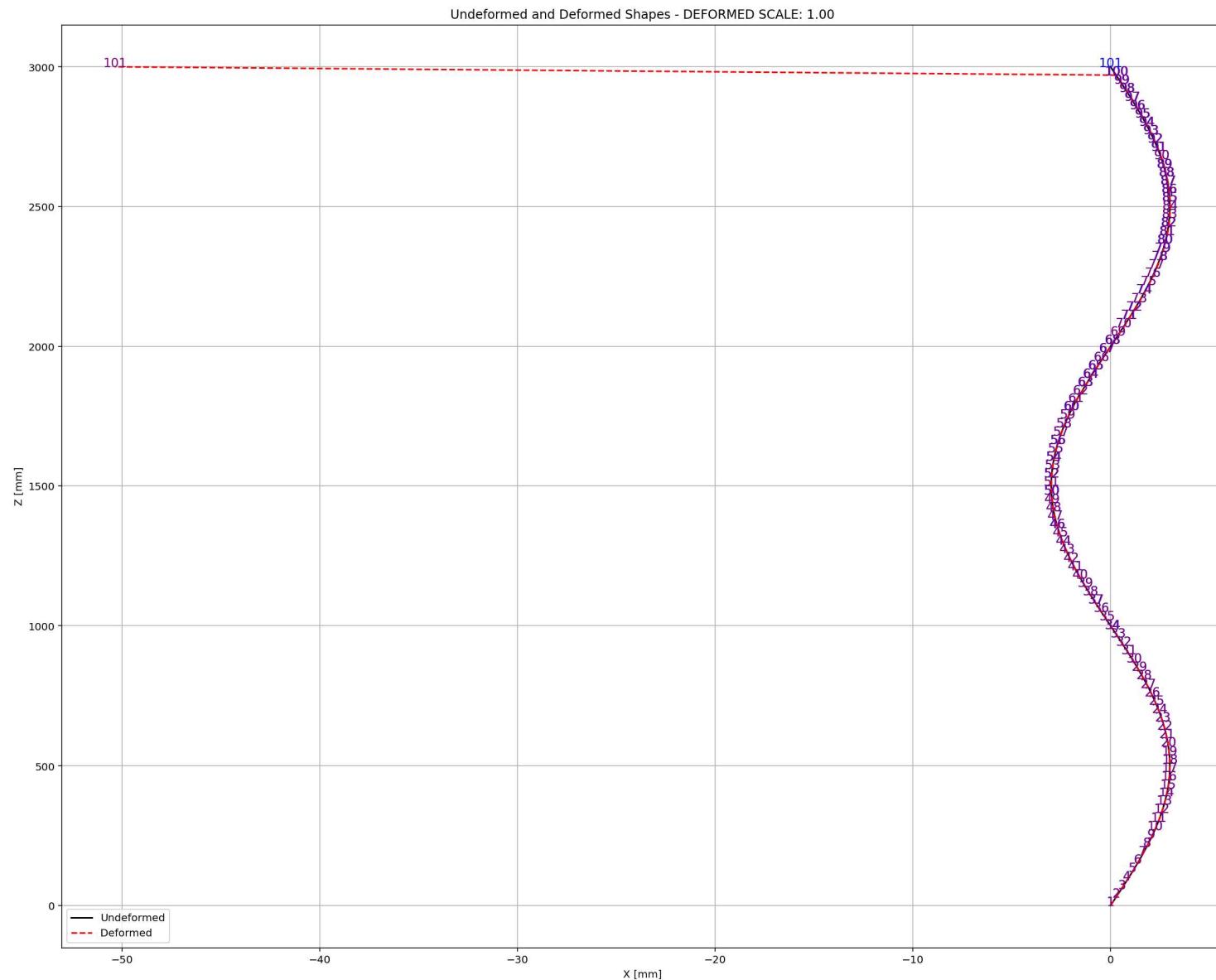


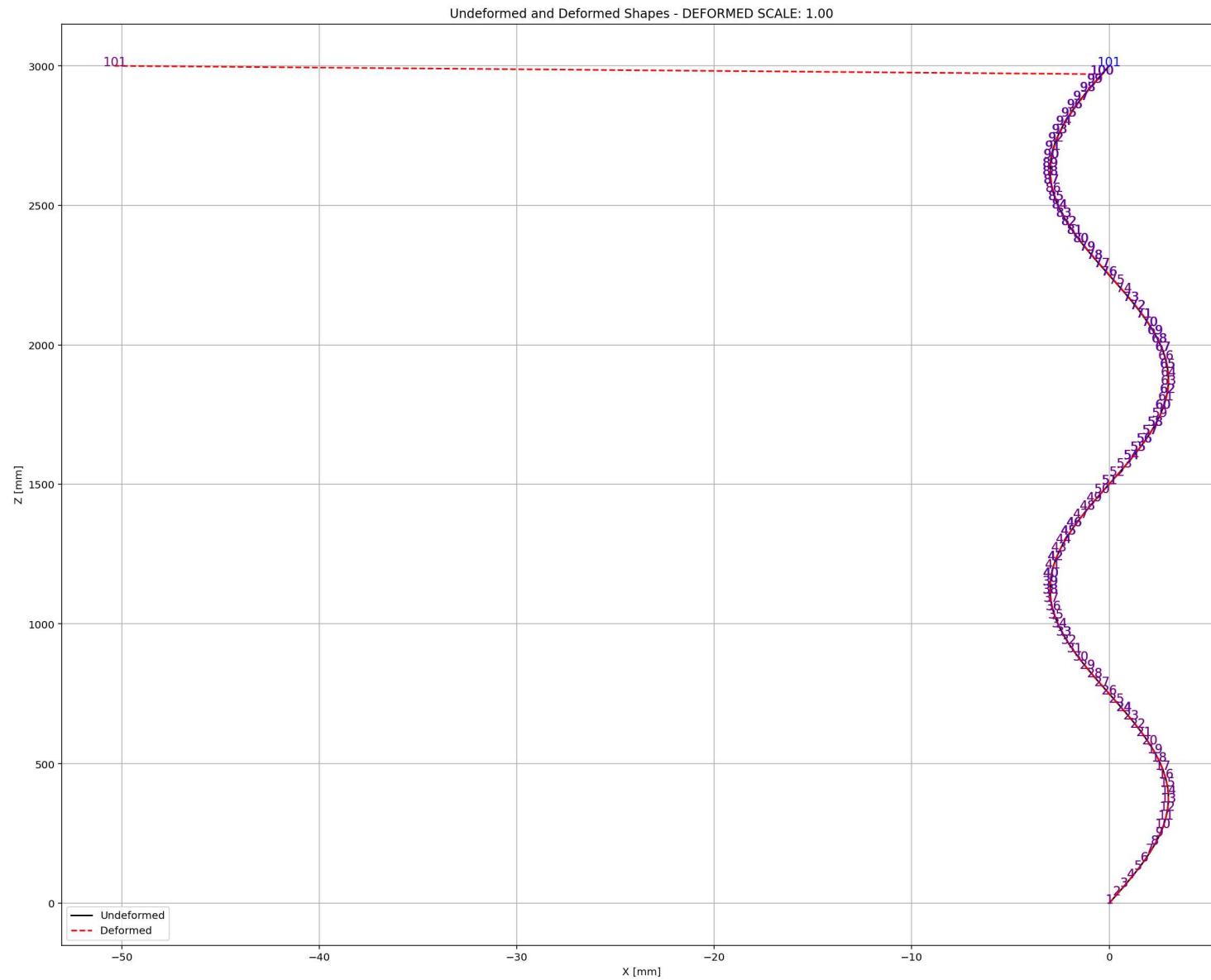


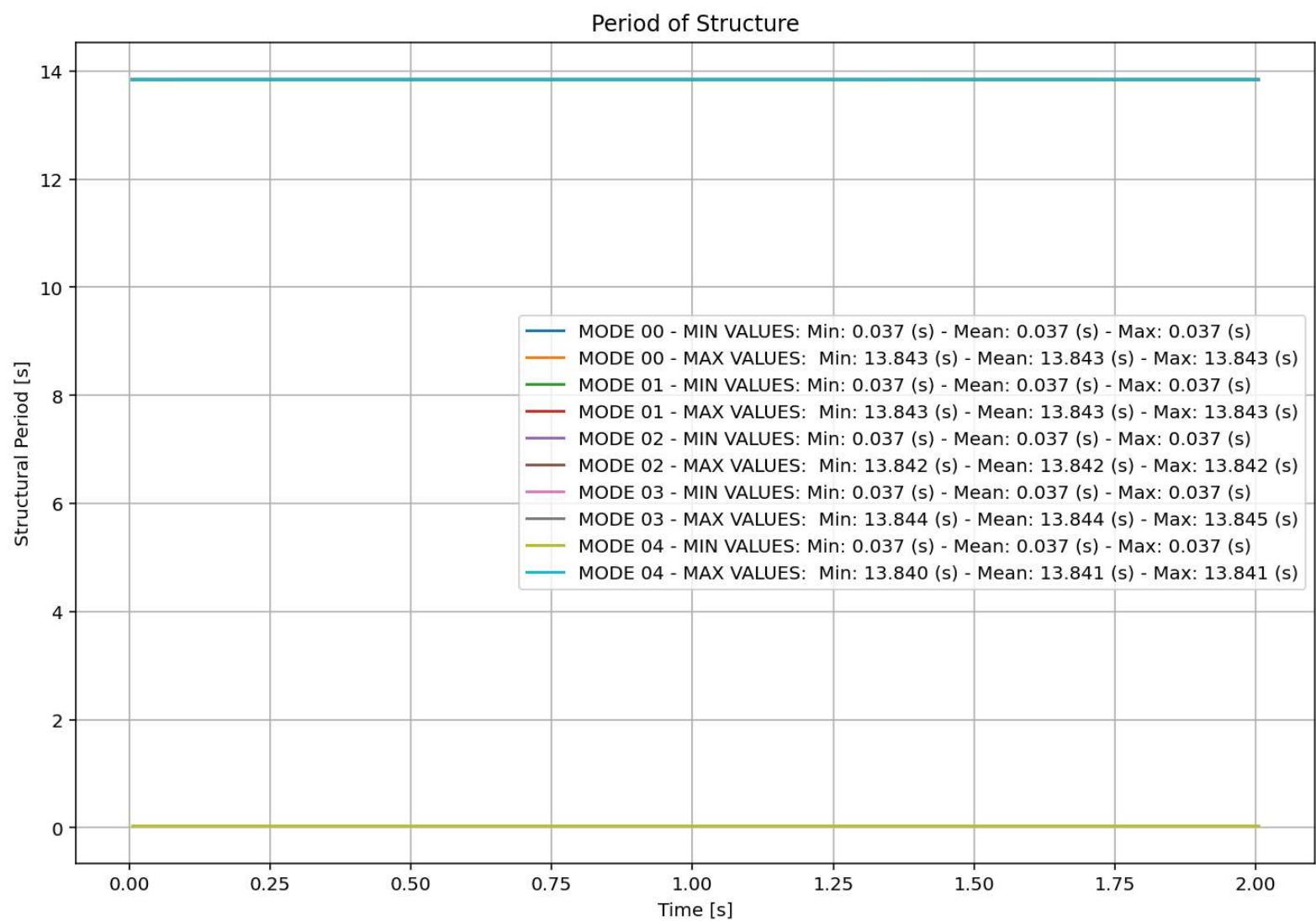


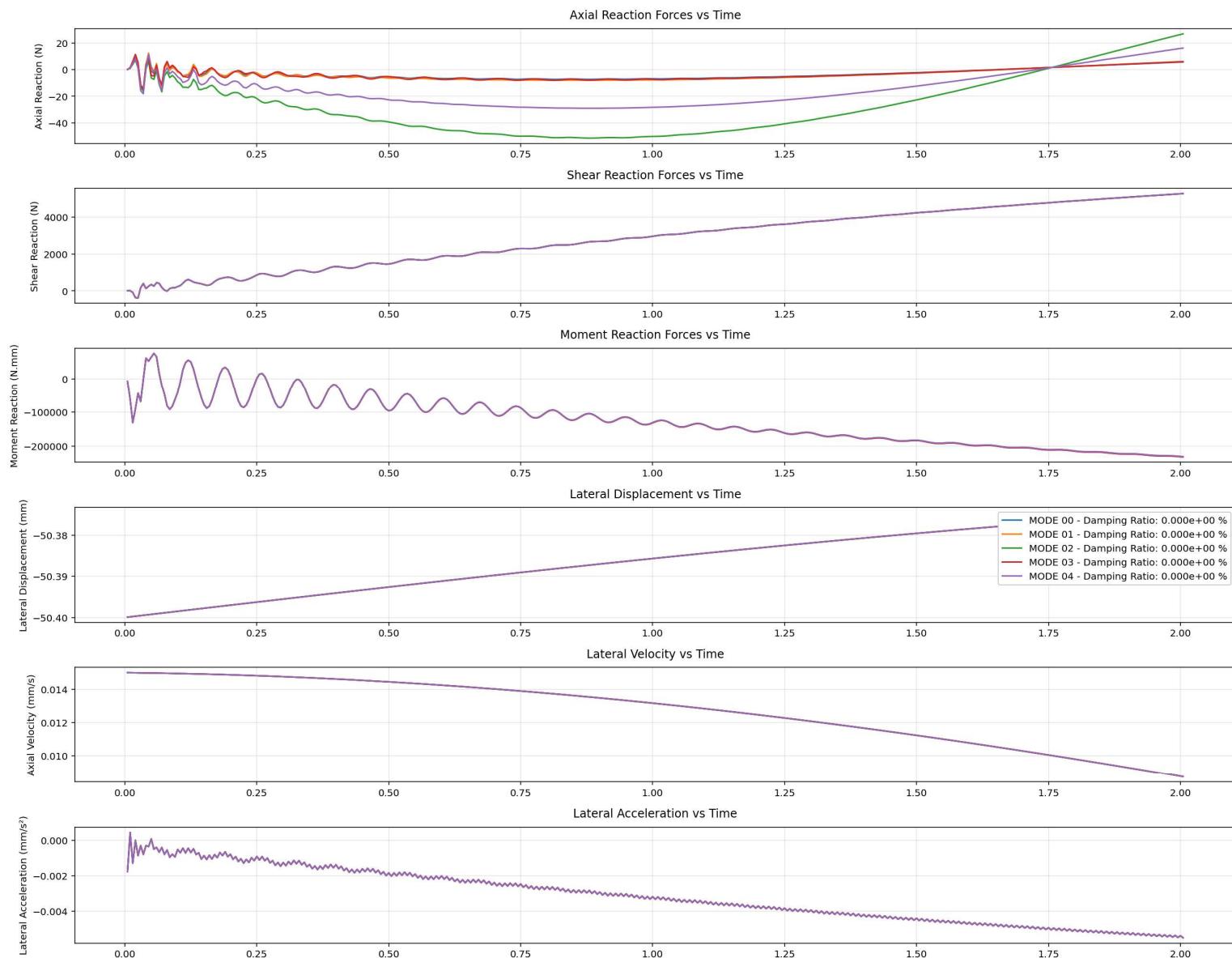


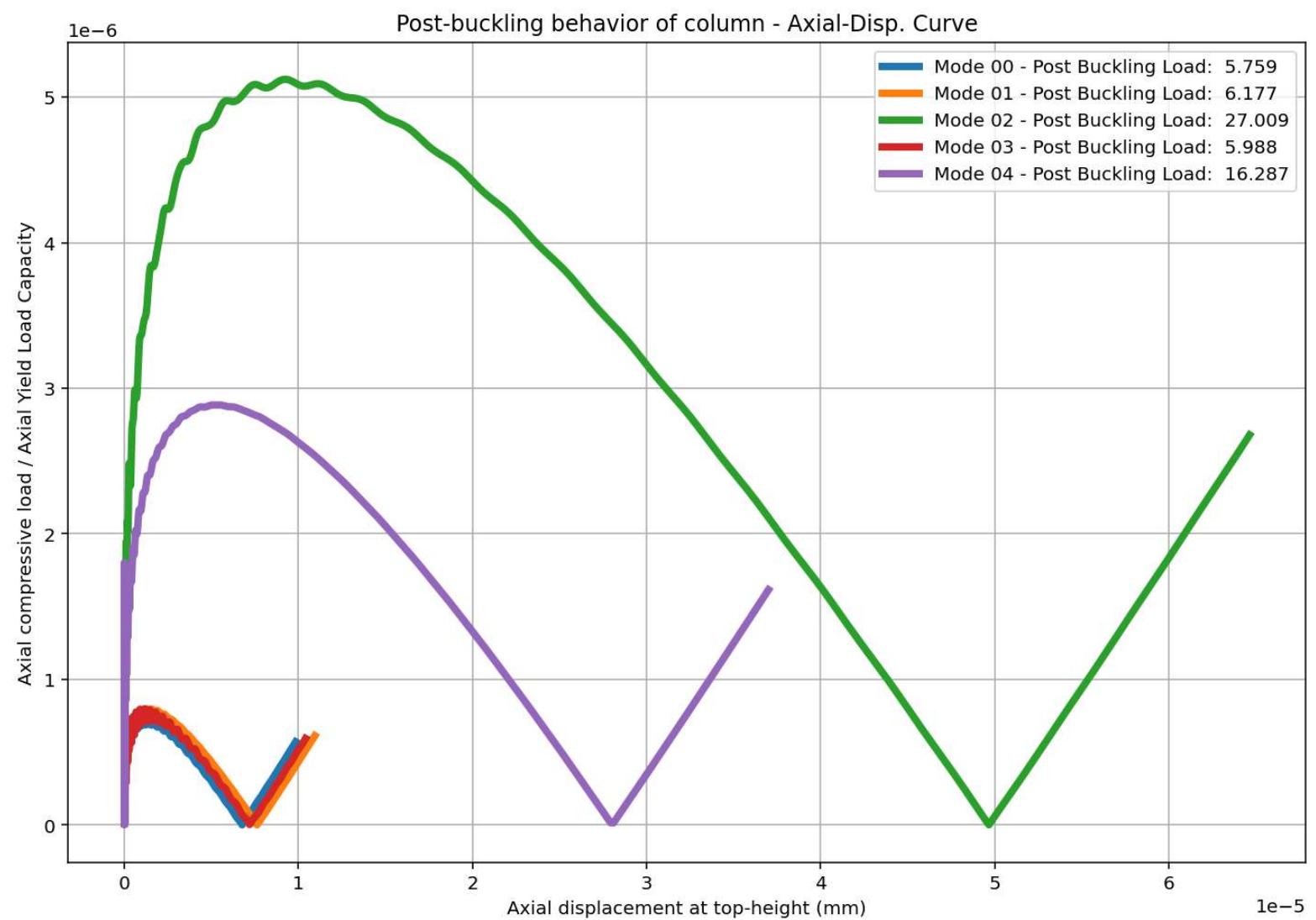


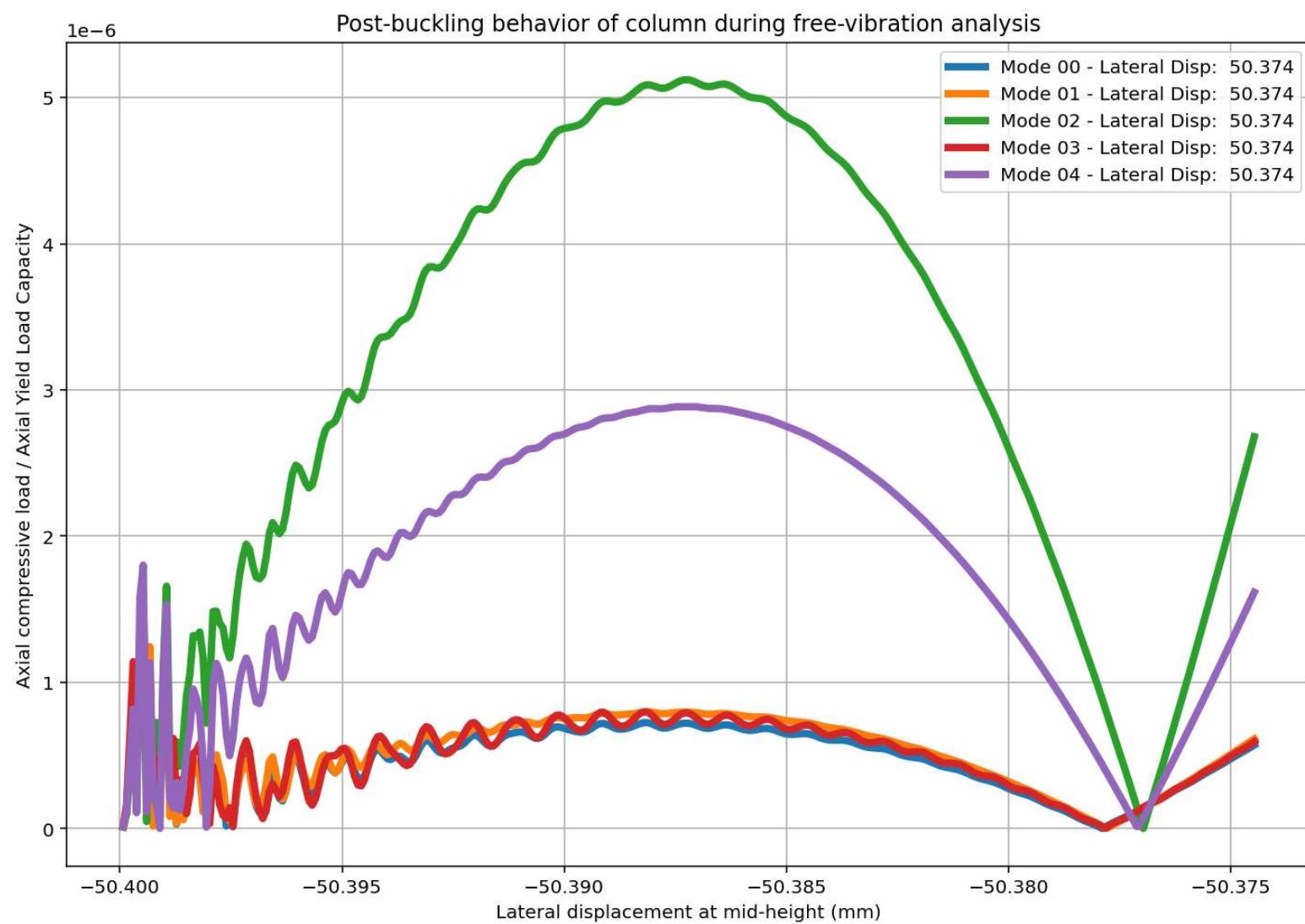


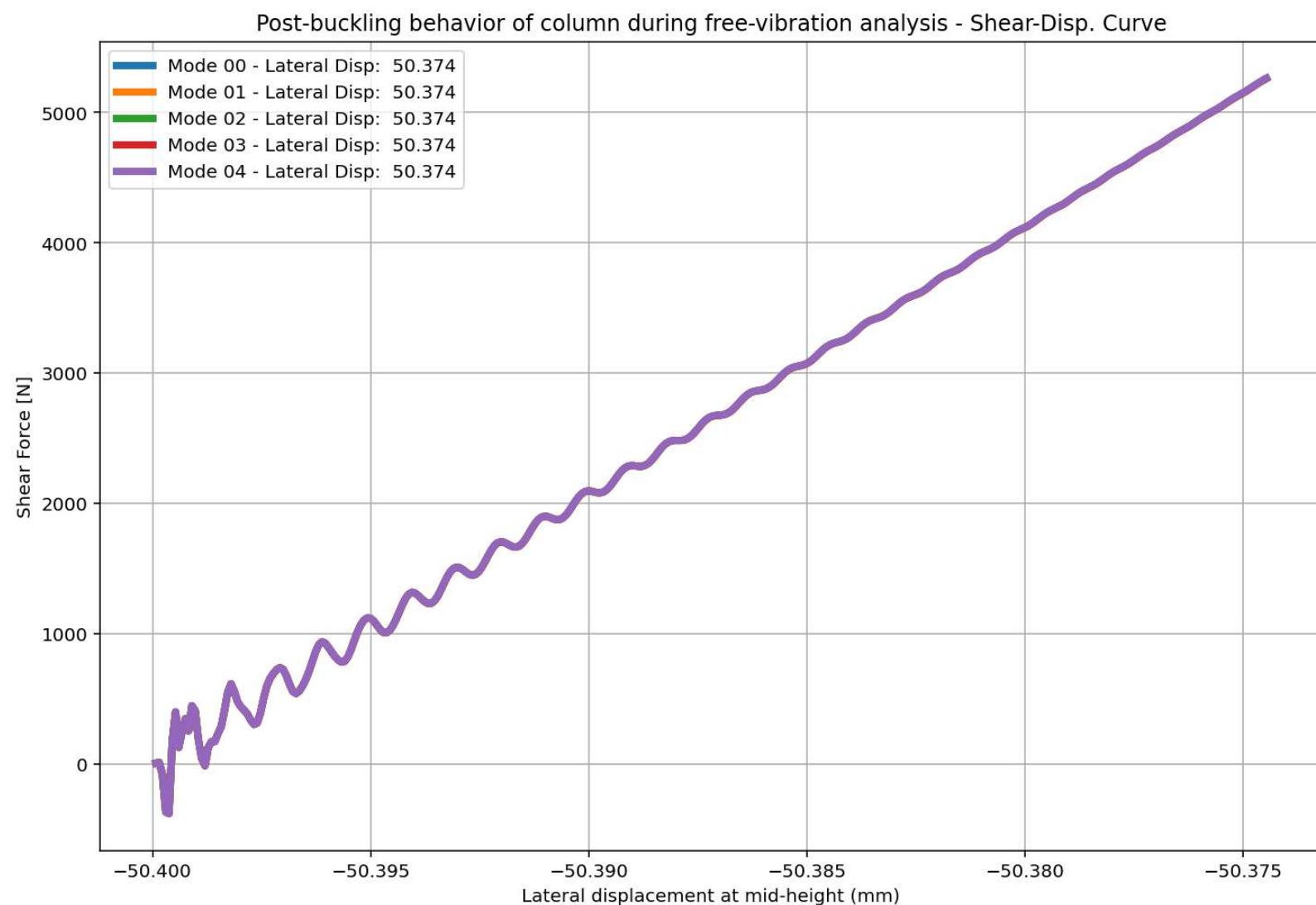


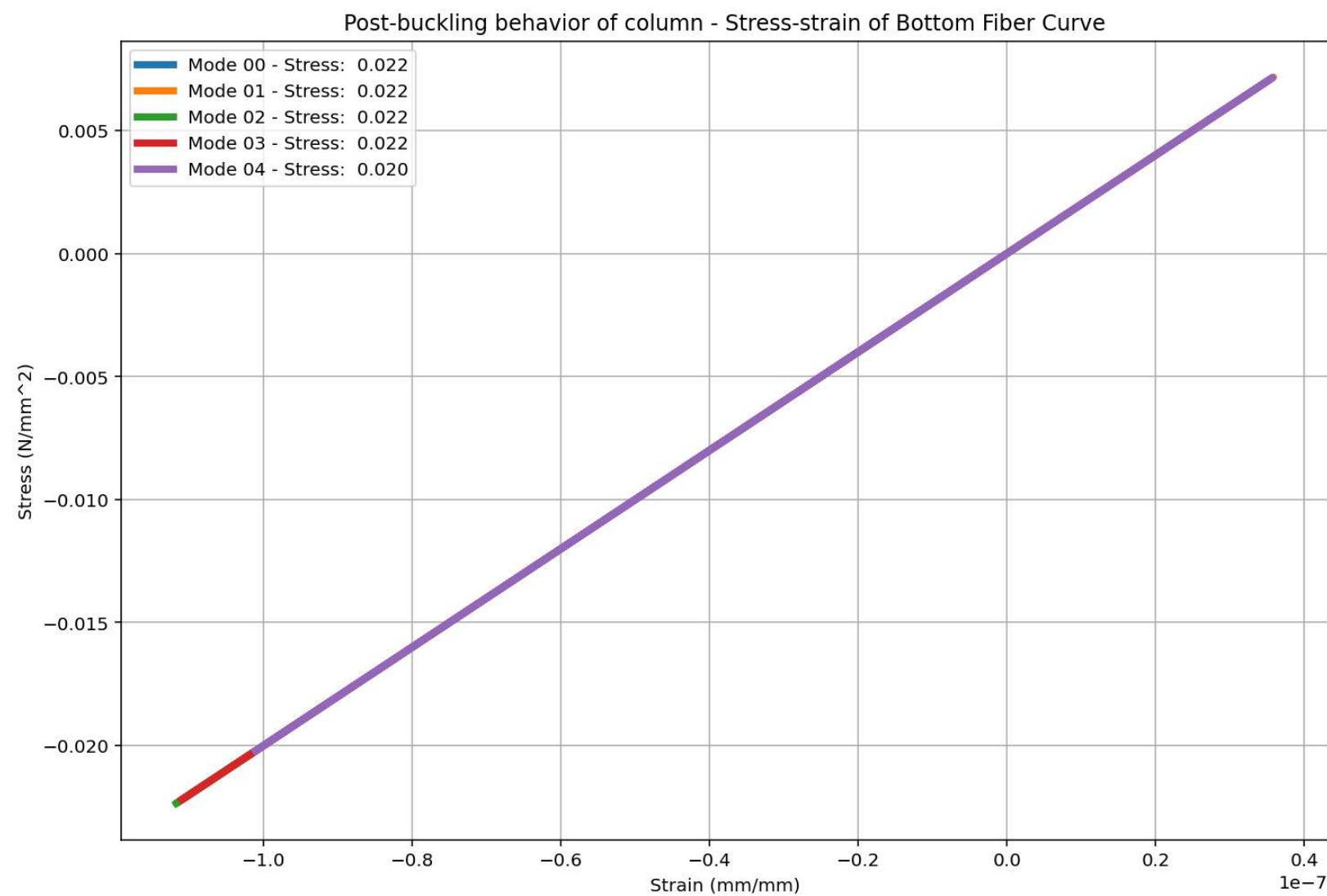


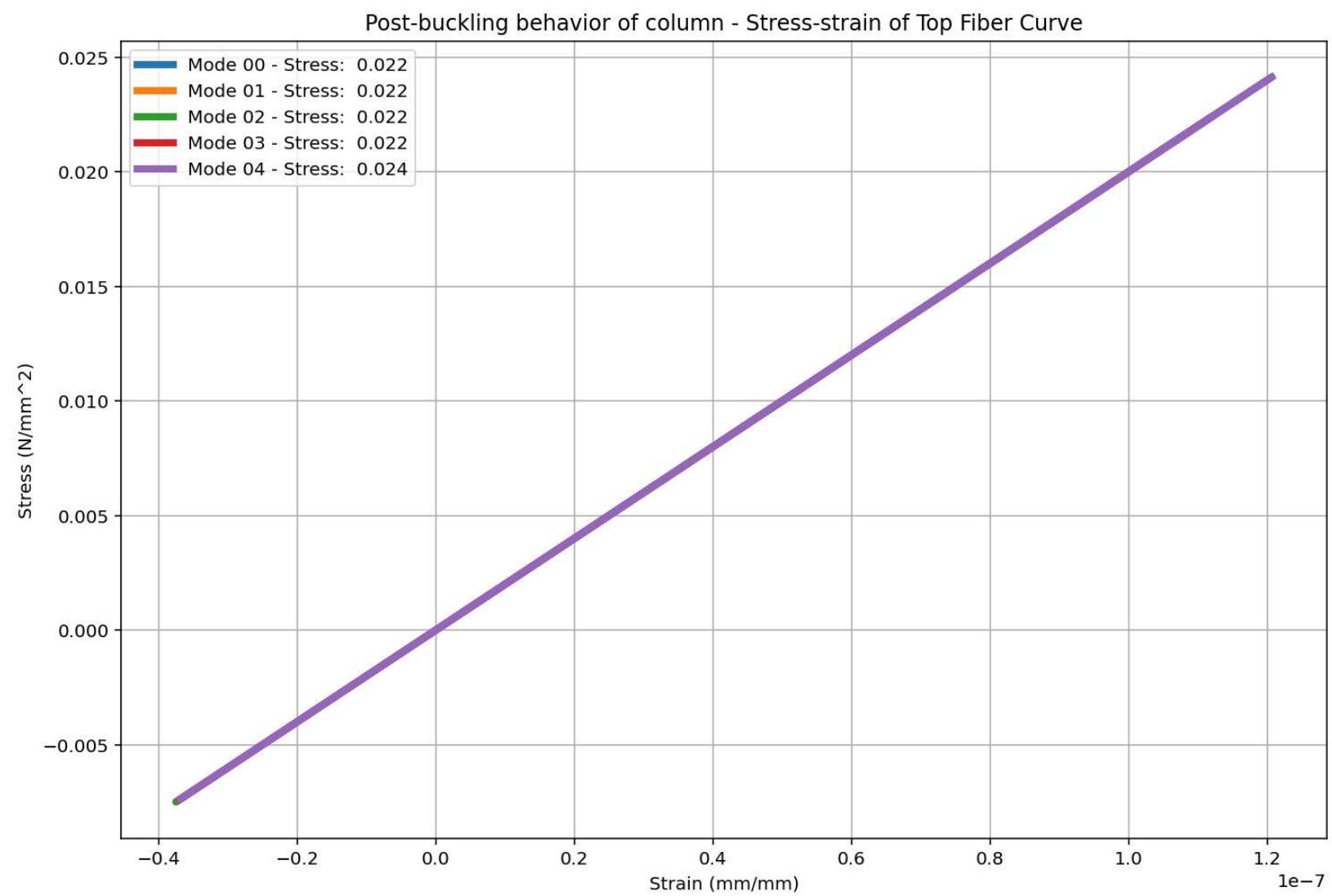


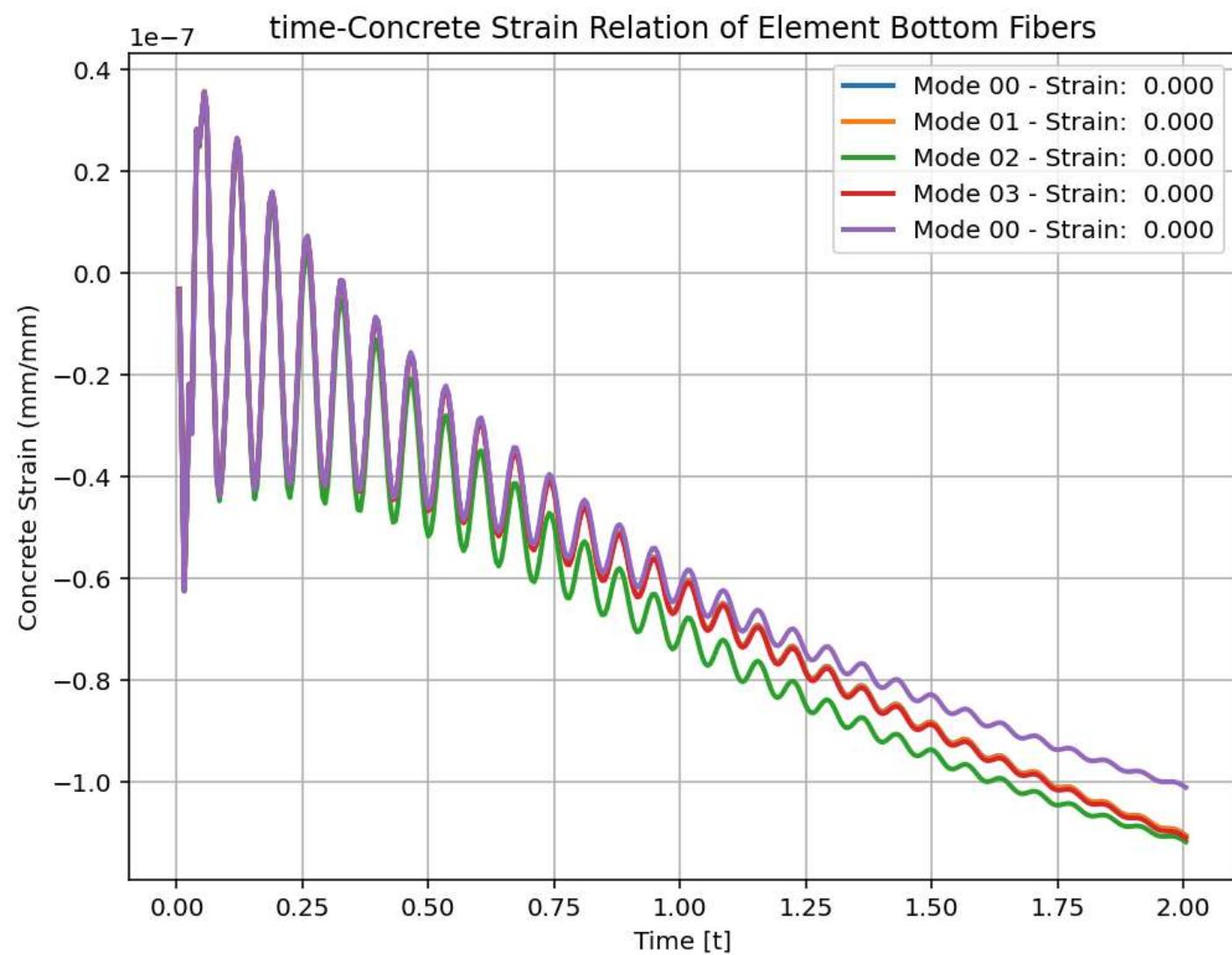


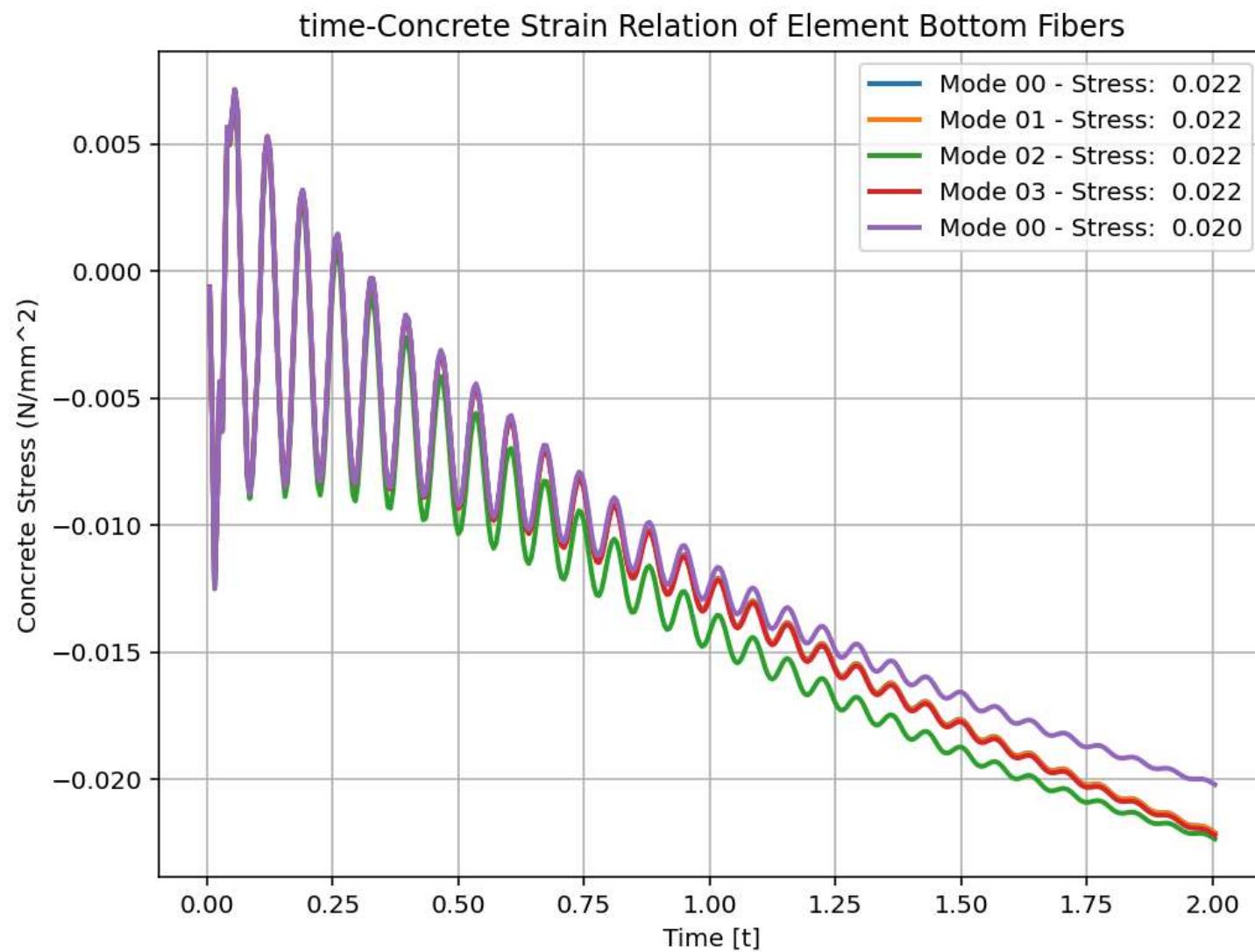


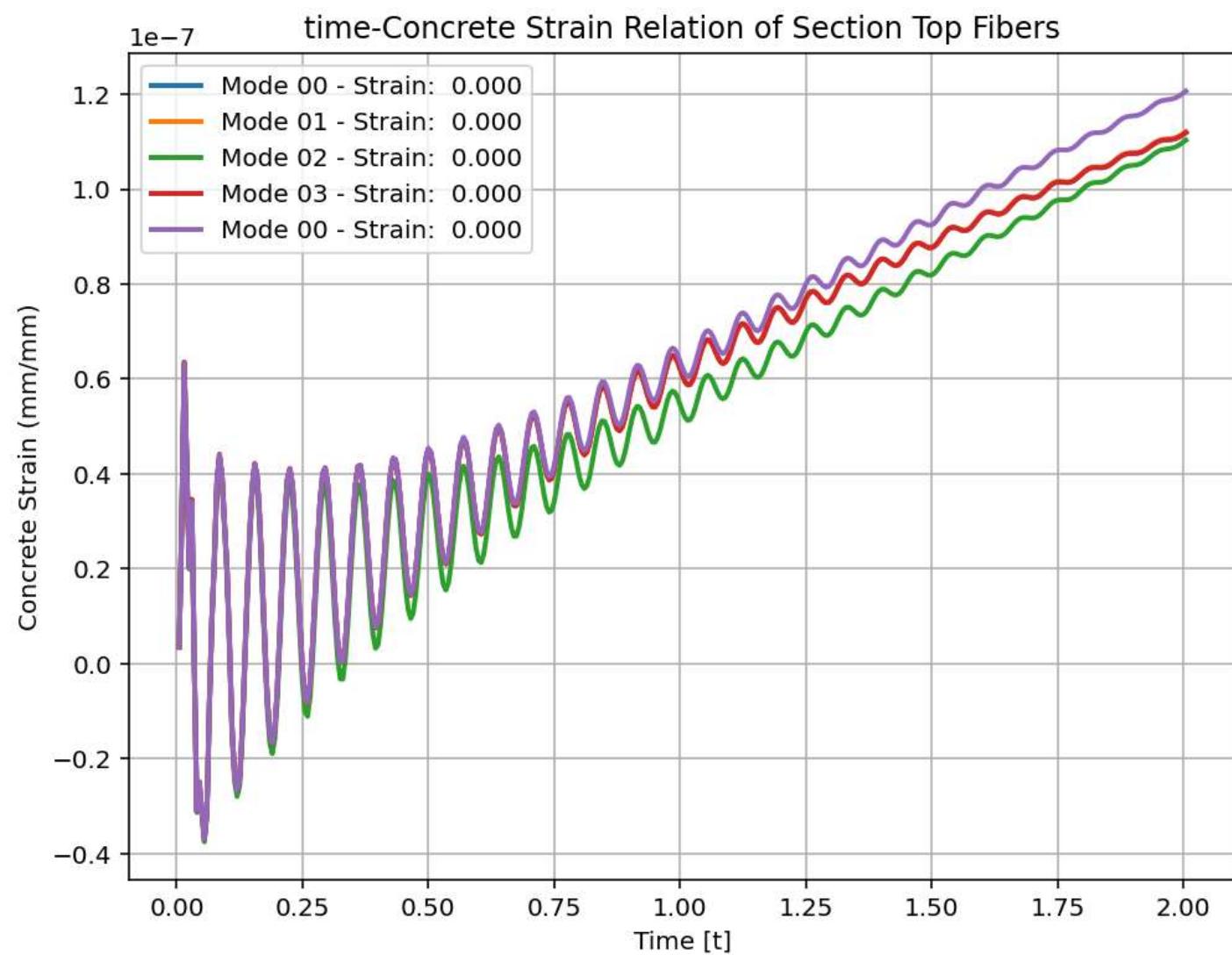


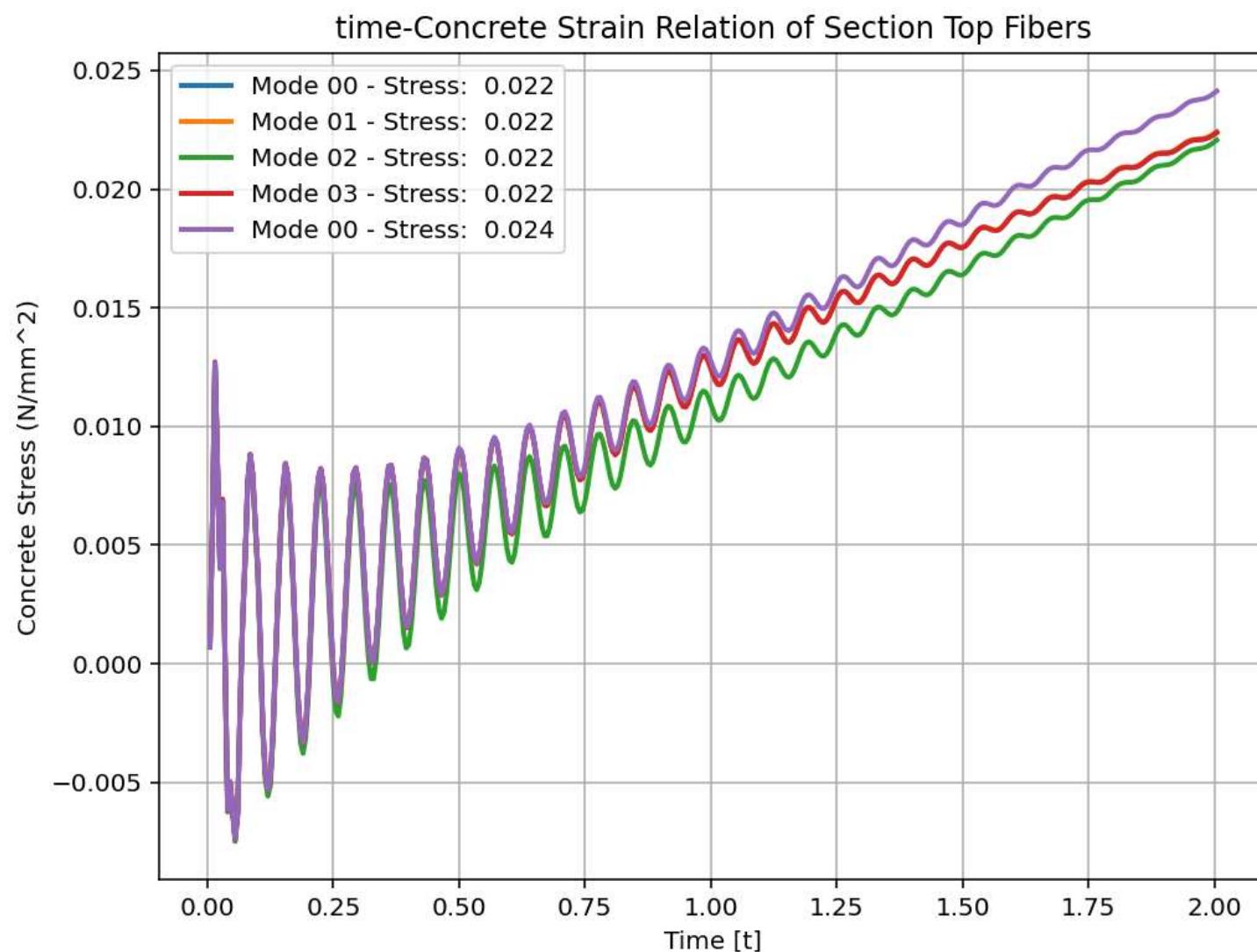




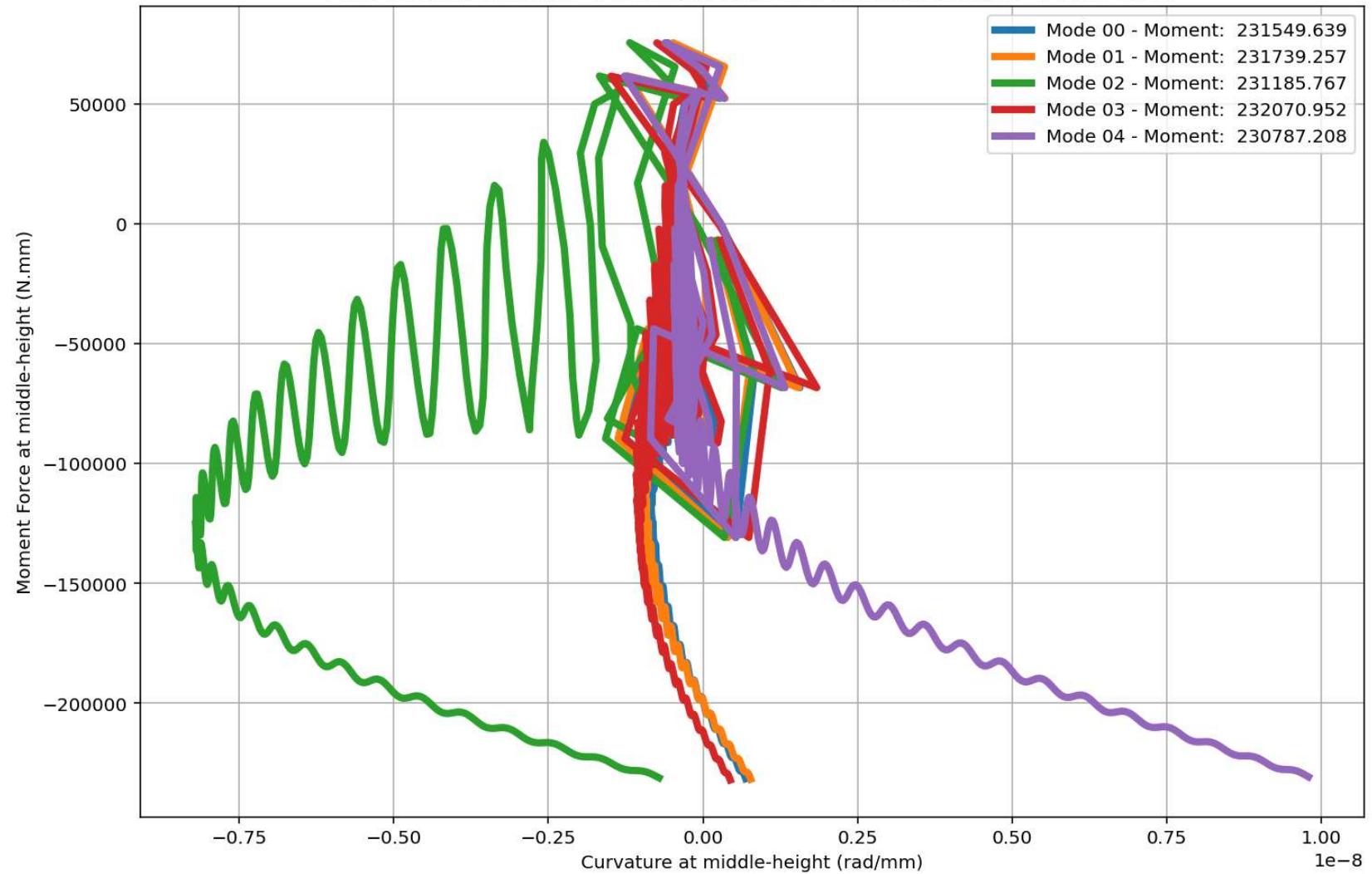




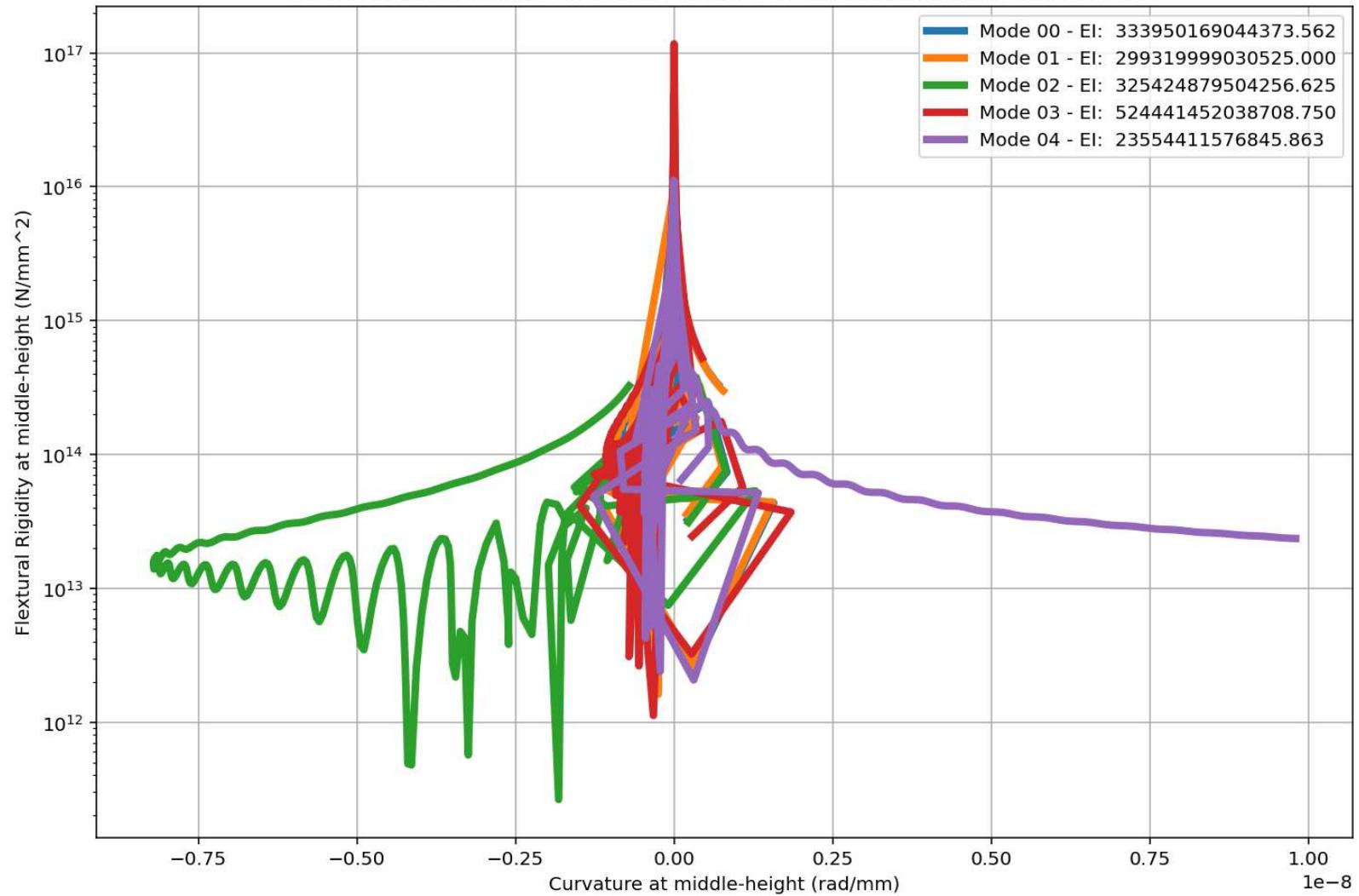




Post-buckling behavior of column during free-vibration analysis - M-phi Curve



Post-buckling behavior of column during free-vibration analysis- Phi-EI Curve



Post-buckling behavior of column during free-vibration analysis - Moment-Rotation Curve

