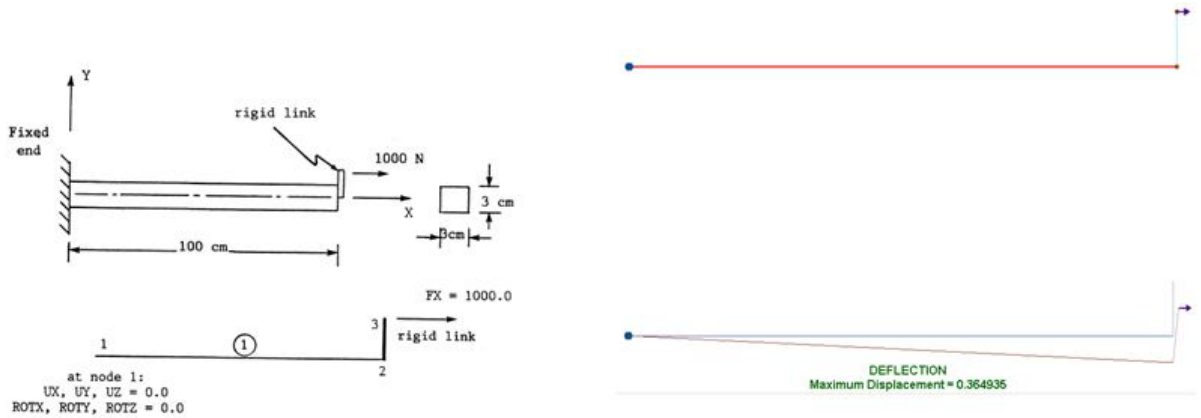


Static analysis of cantilever beam under an off-centred load



Material property : $E=207 \text{ GPa}$, $\nu = 0.3$, $\text{CTE}=1 \times 10^{-5}/^\circ\text{C}$
 3-D beam element, 3 cm square cross-section and 100 cm length,
 Cross-section: $A = 9.0 \text{ cm}^2$, $I_{YY} = 6.75 \text{ cm}^4$, $I_{ZZ} = 6.75 \text{ cm}^4$. Load $F_X = 1000 \text{ N}$, The force is offset by 10 cm, All the six degrees of freedom are constrained at the fixed end. The off-centered force is applied using a rigid link, which connects the point of load application to the free end of the beam

Element type :

Finite element statistics :

Number of nodes	Number of elements	Degrees of freedom
3	2	8

Output parameters	Theoretical value	FEAST ^{SMT}	NISA2 [®]
Maximum Deflection cm	0.36	0.36	0.36
Bending Stress N/cm^2	2333.3	2222.2	2333.3
Bending Moment $N-cm$	10000	10000	10000