MAE 263F Homework 5

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I. Deliverables

The simulation process is as following:

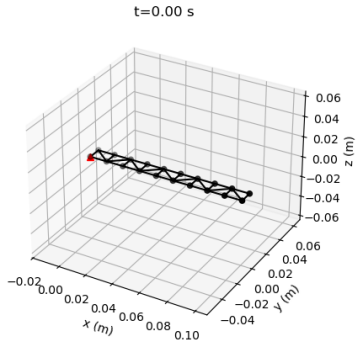

Fig. 1. Beam at $t = 0s$

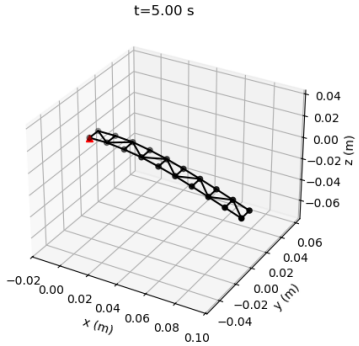

Fig. 2. Beam at $t = 5s$

Steady displacement from discrete plate simulation $\delta_{plate} = 0.035322m$. The theoretical prediction $\delta_{EB} = 0.036750m$. Their normalized difference is $\frac{\delta_{EB} - \delta_{plate}}{\delta_{EB}} = 3.885159\%$.

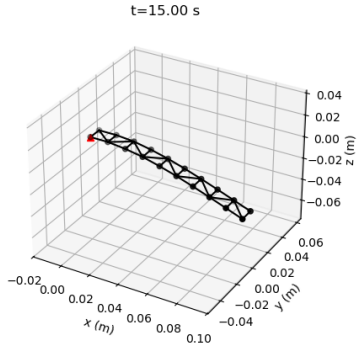

Fig. 3. Beam at $t = 15s$

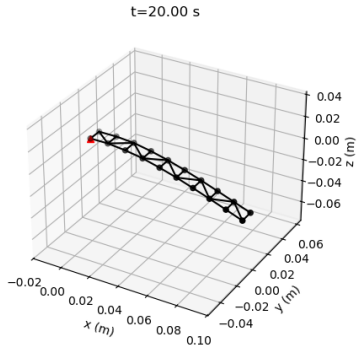

Fig. 4. Beam at $t = 20s$

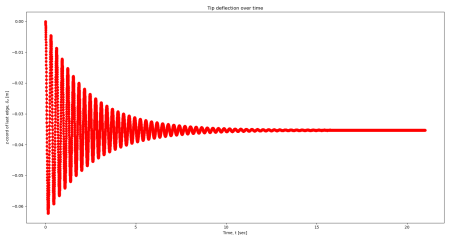

Fig. 5. Beam deflection δ_{plate} vs. time t.