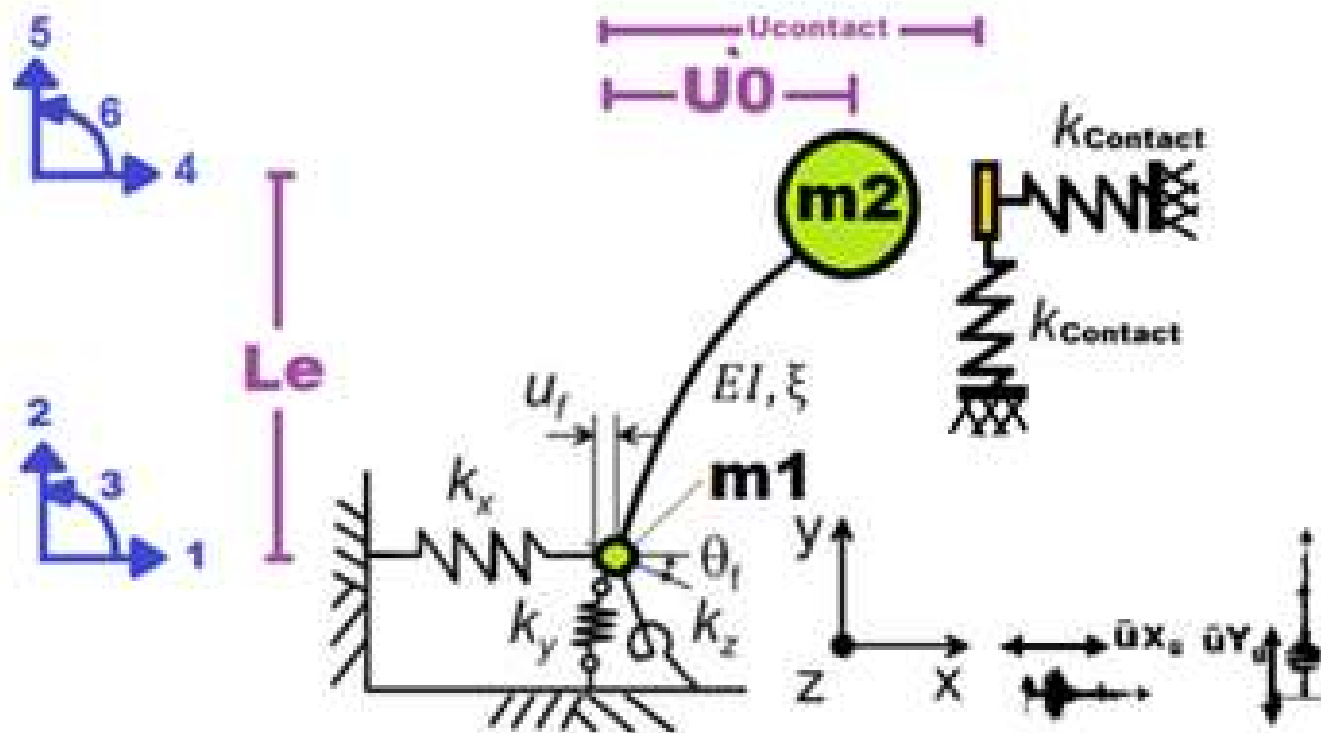
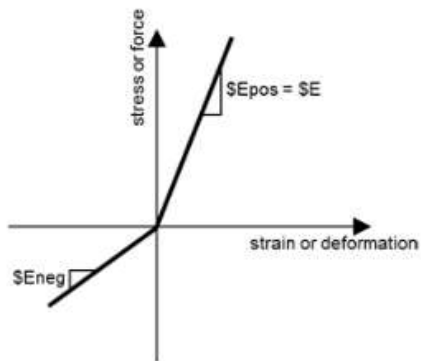


IN THE NAME OF ALLAH

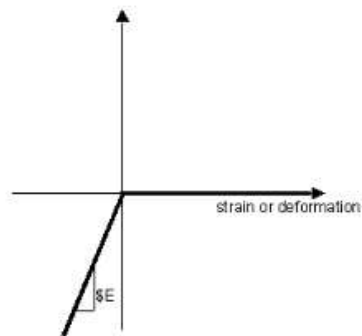
**DYNAMIC TIME HISTORY ANALYSIS  
EXTERNAL OBJECT CONTACT EFFECTS WITH SOIL-STRUCTURE  
INTERACTIONS VIA THE SPRING METHOD**

WRITTEN BY SALAR DELAVAR GHASHGHAEI (QASHQAI)

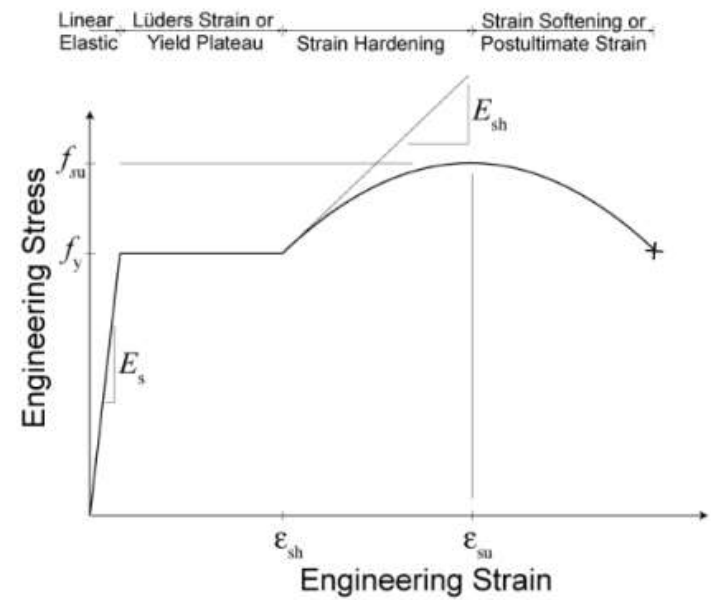




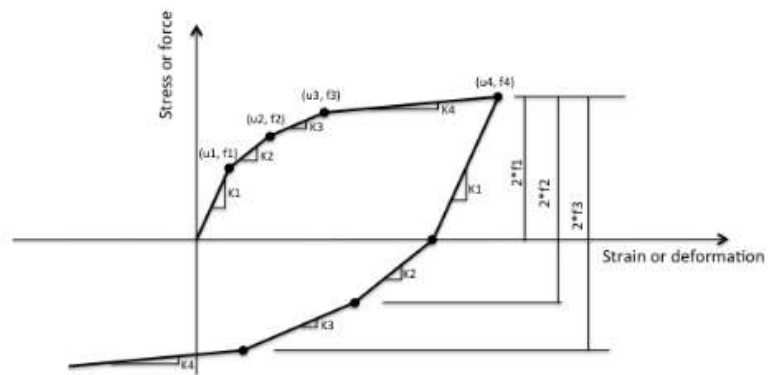
Elastic Uniaxial Material



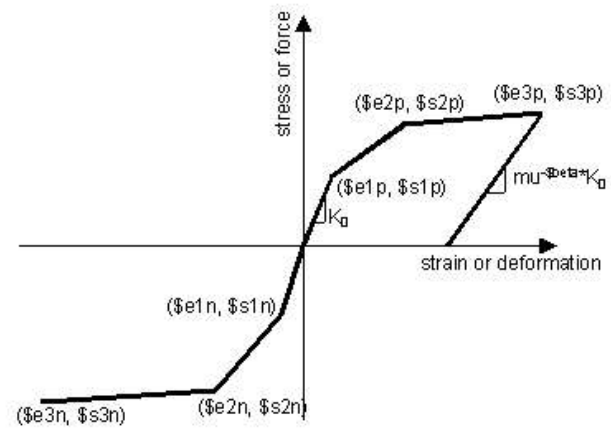
Elastic-No Tension Material



Reinforcing Steel Material

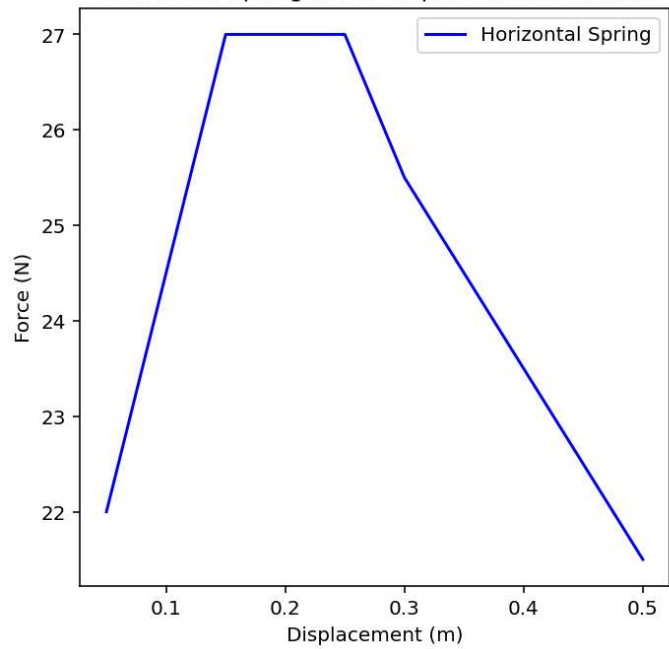


MultiLinear Material

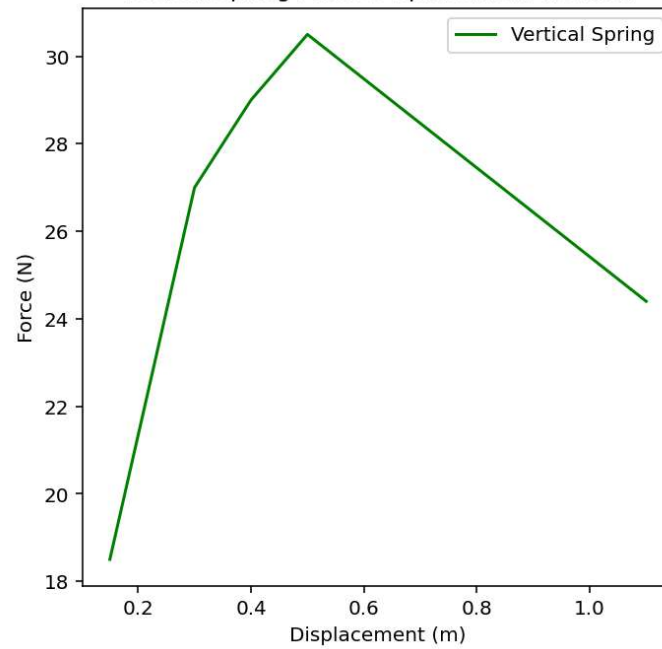


Hysteretic Material

Horizontal Spring Force-Displacement Relation



Vertical Spring Force-Displacement Relation



Rotational Spring Moment-Rotation Relation

