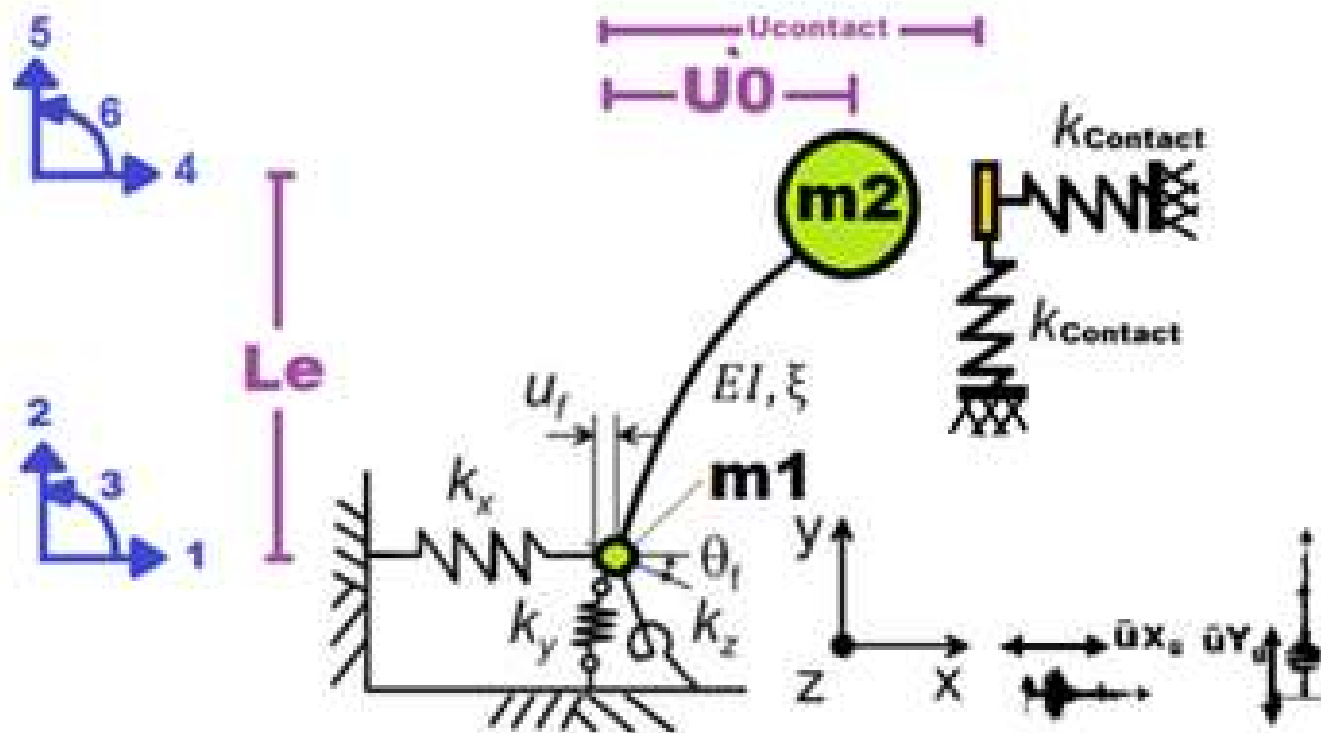
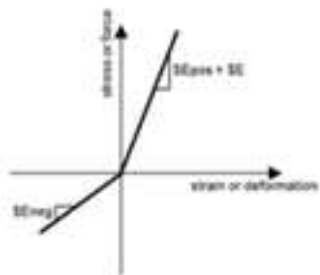


IN THE NAME OF ALLAH

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

WRITTEN BY SALAR DELAVAR GHASHGHAEI (QASHQAI)

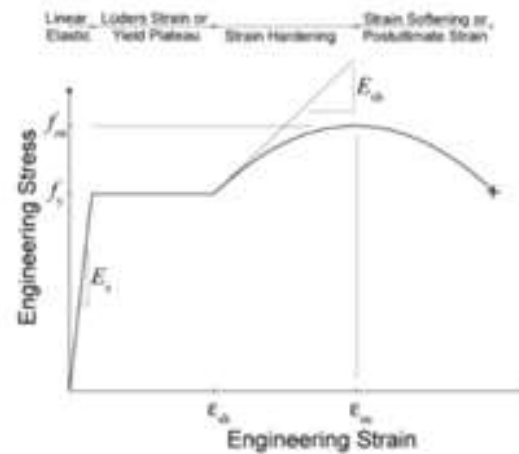




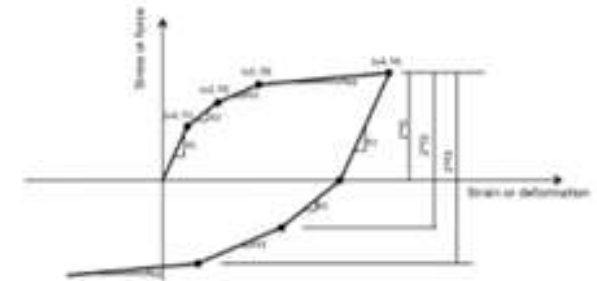
Elastic Uniaxial Material



Elastic-No Tension Material

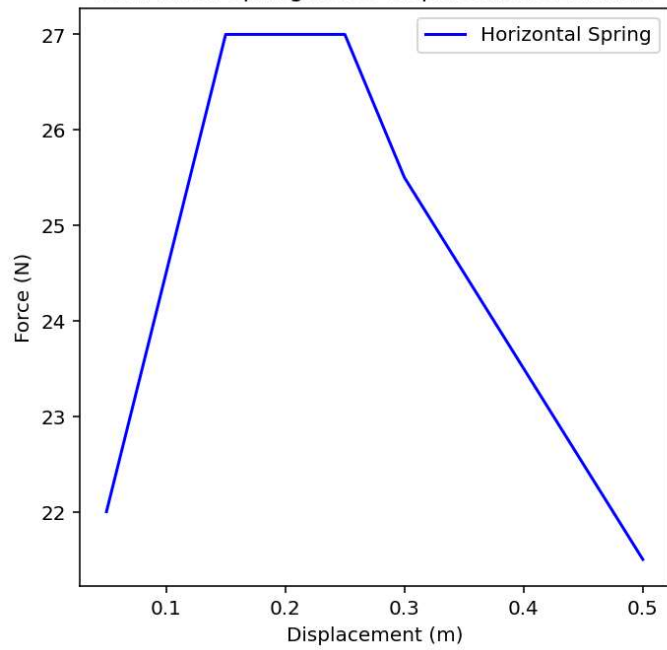


Reinforcing Steel Material

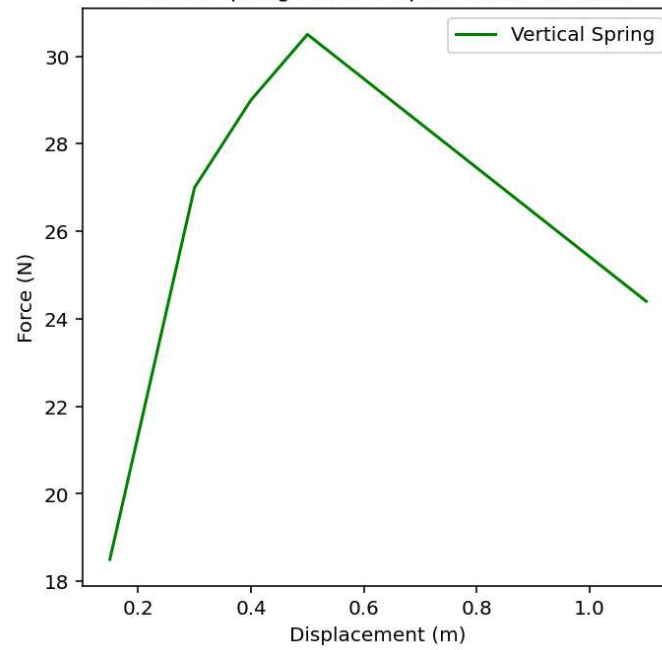


MultiLinear Material

Horizontal Spring Force-Displacement Relation



Vertical Spring Force-Displacement Relation



Rotational Spring Moment-Rotation Relation

