Rubber, Foam, & Viscoelastic Materials in LS-DYNA

Objective of the course: Learn about several Rubber, Foam, Visco-elastic material models in LS-DYNA to solve engineering problems. Detailed descriptions are given of the data required to use such material in analysis. Examples are used to illustrate the points made in the 16 hours lectures.

- Introduction, Rubber
- Experimental Characterization
- Material Models For Rubber in LSDYNA
  - 7 Blatz-Ko Rubber
  - 27 Mooney-Rivlin Rubber
  - 31 Frazer-Nash Rubber
  - 77_H Hyperelastic and 77_O Ogden Rubber
  - 87 Cellular Rubber
  - 127 Arruda Boyce Rubber
  - 181 Simplified Rubber/Foam
  - 183 Simplified Rubber with Damage
- Material Data & Behavior Demonstration
- Concluding Remarks
- Introduction, Foam and Visco-elastic Materials
- Experimental Characterization
- Material Models for Viscoelesticity
  - *MAT_VISCOELASTIC (*MAT_6)
  - *MAT_KELVINMAXWELL_VISCOELASTIC (*MAT_61)
  - *MAT_GENERAL_VISCOELASTIC (*MAT_76)
- Material Models for Foam in LSDYNA
  - 5 *MAT_SOIL_AND_FOAM
  - 26 *MAT_HONEYCOMB
  - 38 *MAT_BLATZ-KO_FOAM
  - 53 *MAT_CLOSED_CELL_FOAM
  - 57 *MAT_LOW_DENSITY_FOAM
  - 62 *MAT_VISCOUS_FOAM
  - 63 *MAT_CRUSHABLE_FOAM
  - 73 *MAT_LOW_DENSITY_VISCOUS_FOAM
  - 75 *MAT_BILKHU/DUBOIS_FOAM
  - 83 *MAT_FU_CHANG_FOAM
- Material Data & Behavior Demonstration
- Concluding Remarks