

LS-DYNA® Advanced FEM and Meshfree Methods

For solid and structure analyses: manufacturing & material failure simulation

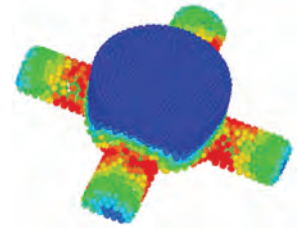
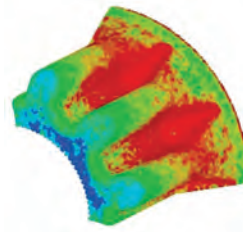
The LS-DYNA® advanced FEM and Meshfree module integrates state-of-the-art numerical methods for solving some of most challenging problems including large topology change of material, manufacturing processes including cutting and jointing, composite material and fracture analysis. Numerical methods are introduced and invented to be able to accurately capture physical behavior of various materials under complicated circumstances. This module is coupled with thermal solver in LS-DYNA® to perform Multiphysics simulations.

Applications:

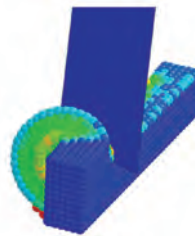
- Bulk forming: forging, extrusion
- Machining: cutting, shearing, polishing
- Jointing: Riveting, Welding, Drilling
- Brittle, ductile and rubber-like materials
- Fracture analysis

Features:

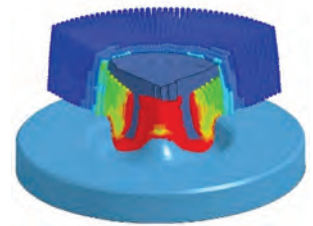
- Multiple advanced numerical tools
 - Element free Galerkin (EFG)
 - Meshfree-enriched FEM (ME-FEM)
 - Smoothed particle Galerkin (SPG)
 - Peri-dynamics
 - eXtended FEM (X-FEM)
- 2D and 3D (shell & solid)
- Explicit and Implicit analysis
- Coupled with thermal solver
- Adaptive re-meshing
- Physics-based failure model



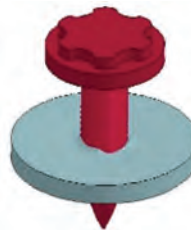
Thermal-mechanics coupled analyses of forging and extrusion (EFG adaptive re-meshing with high-order remapping scheme)



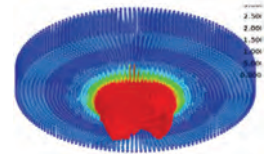
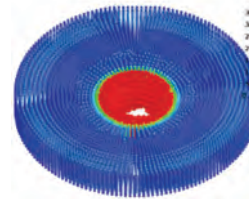
Metal cutting



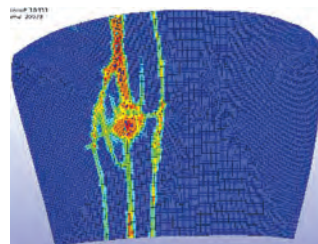
Riveting



Machining and jointing analyses (SPG)



Drilling



Damage on windshield under impact (peri-dynamics)



Crack in twisted cylinder (X-FEM)

Youtube Channel:

www.youtube.com/channel/UCPuoss7k_louTDXGT2EFiw

Twitter:

<https://twitter.com/LSTCandDYNAmore>

Information - 30-day LS-DYNA demo license: sales@lstc.com