



11th Int'l LS-DYNA Users Conference Training Courses  
Wednesday & Thursday, June 09-10, 2010

Training Course Registration: 8:00 a.m

Training Courses Held: 9:00 a.m - 5:00 p.m.

Continental Breakfast/Lunch both days

**ALE & FSI in LS- DYNA - Duration: 2 Days**

This course covers the features in the solver provided to analyze fluids and, in particular, the interaction of fluids and structures using the Arbitrary Lagrangian Eulerian (ALE) capabilities.

The theoretical background to fluid modeling in LS-DYNA is presented and illustrated with several practical applications; problems solved during the workshop include tank sloshing, tank dropping (partial and complete fill), viscous flow in a channel, underwater explosion, bird strike, slip collision and acoustics in air and water.

A specialist knowledge of fluids is not required.

The course content is as follows:

- Introduction of Eulerian and Lagrangian formulations
- ALE smoothing algorithms:
  - Simple Average
  - Volume Weighting
  - Equipotential.
- Advection Algorithms.
  - First order donor SALE algorithm
  - Second order Van Leer
  - Second order + Half Index shift.
- Material and void
  - Advection algorithm in voided material
- Multi-material formulation.
  - Advection in multi-material formulation.
  - Pressure equilibrium.
  - Fluid/Structure Coupling
  - BEM Vibroacoustic Analysis in LS-DYNA