



15th LS-DYNA International Conference & Users Meeting

Post-Conference Training (2 day)
Wed & Thurs, June 13th & 14th, 2018, 9am-5pm
Edward Hotel & Convention Center, Dearborn, MI

ALE & Fluid Structure Interaction in LS-DYNA

Instructor: Mhamed Souli

Objective

Class provides new and experienced LSDYNA users a deep understanding of the ALE and FSI capabilities in LS-DYNA. The class delivers the skillset to solve ALE and FSI problems, understanding when and how to use ALE keywords. Several LS-DYNA input files using different ALE and FSI applications (Air blast, Sloshing, hydrodynamic impact, underwater explosion,..), and covering different ALE and coupling keywords, will be provided and used during the workshop...

COURSE CONTENT

The following chapters with related LS-DYNA keywords and input files:

- Time Integration For ALE formulation
 - Material Modeling
 - Energy Equation
 - Material Models
 - Equations of State
- Advection Algorithms
 - First order algorithm SALE Method
 - Second order Van Leer Algorithm
- ALE Smoothing Algorithms.
 - Equipotential Algorithm
 - Simple Average Algorithm
 - Volume weighting Algorithm
- Multi-Material Formulation
 - Volume and Void Formulation (VOF Method)
 - Single and multi-material Formulation
- Advection Algorithms
 - First order algorithm SALE Method
 - Second order Van Leer Algorithm
- Material Initialization
- ALE reference system
- Coupling algorithm:
Constrained_Lagrange_in_solid
 - Acceleration Coupling
 - Velocity Coupling
 - Penalty Coupling