DYNAmore GmbH
Industriestr. 2
D-70565 Stuttgart
Germany

DYNAmore GmbH

DYNAmore is dedicated to support engineers in solving nonlinear mechanical as well as multiphysical problems numerically. Our product portfolio includes the finite element solver LS-DYNA, the pre- and post-processor LS-PrePost and the optimization software LS-OPT as well as numerous finite element models needed for crash worthiness simulation (dummies, barriers, pedestrian and human models, ...). Our main field of activity is to sell, teach, support, and co-develop the software LS-DYNA and LS-OPT. In addition, we provide engineering services for numerical analysis and integrate simulation software in your CAE environment.

Our advanced training offer includes classical seminars, workshops, webinars, support and information days as well as LS-DYNA user conferences. More detailed information can also be found on our support and tutorial websites: www.dynasupport.com and www.dynaexamples.com.

We are one of the first addresses for pilot studies and development projects with respect to the simulation of nonlinear dynamic problems. We are always at your disposal to answer your questions on specific applications as well as test licenses.

You will find DYNAmore in Stuttgart, Dresden, Ingolstadt, Berlin, Langlingen, Zurich (CH), Linköping (S), Göteborg (S) and Turin (I).

Organization

Date
9 - 10 November 2015, 9:00 - 17:00

Fee
1.100 Euro plus VAT, 50 % discount for universities.
Students free of charge, provided there are vacancies.

Language
English

Location
DYNAmore GmbH
Industriestr. 2, D-70565 Stuttgart, Germany
Tel. +49 (0)711 - 459600 - 0

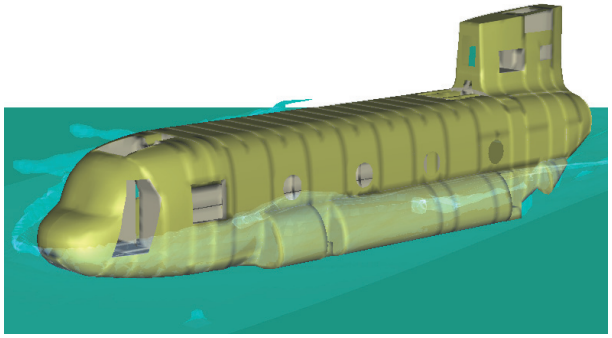
Registration
Please use the registration form or register online at:
www.dynamore.de/ale-e.

FSC Printed on paper made from 60% FSC certified recycled fibres and 40% FSC certified pulp.

Invitation to the seminar

ALE and Fluid-Structure Interaction in LS-DYNA

9 - 10 November, Stuttgart



Courtesy of The Boeing Company

Lecturer
Prof. Mhamed Souli, University of Lille

INVITATION

ALE and Fluid-Structure Interaction in LS-DYNA

In this seminar, you receive comprehensive information about the latest developments in LS-DYNA to analyze fluids and, in particular, the fluid-structure interaction using its Arbitrary Lagrangean Eulerian (ALE) capabilities. Attendees will learn about the theoretical background how fluids are implemented in LS-DYNA using ALE and will gain a deep understanding of these concepts with the aid of many hands-on examples.

The seminar is directed towards advanced LS-DYNA users, who would like to solve problems in the fields of aquaplaning, tank sloshing, tank dropping (partially and completely filled), bird strike, viscous flow, ship collision, underwater explosion and acoustics in air and water. Prior knowledge of fluid dynamics is not required.

DYNAmore GmbH

CONTENT/LECTURER

Content

- Basic theoretical background
  - Navier-Stokes equation
  - Mass- and energy balance
- Selection of material models
- Selection of equations of state
- Discretization and numerical solution
  - Lagrangean formulation
  - Eulerian formulation
  - ALE formulation
  - Moving Eulerian mesh
  - Operator-Split method
  - Advection schemes
  - Algorithms for mesh smoothing
- Multi-material ALE
  - Pressure relaxation based on volume fractions
  - Interface reconstruction
- Fluid-structure interaction
  - Constraint method
  - Penalty method
  - Leakage and methods to avoid it
- Vibro-Acoustic
- Explosions
- Practice examples

Lecturer

The course instructor Prof. Mhamed Souli of the University of Lille is a longtime program developer at LSTC who implements new features for ALE/SPH in LS-DYNA.

Courtesy of Hankook Tire Co.

REGISTRATION FORM

Registration

☐ I herewith register for the seminar:
"ALE and Fluid-Structure Interaction in LS-DYNA",
9 - 10 November 2015, Stuttgart, Germany.

☐ Industry: 1.100 € ☐ University: 550 €

Students free of charge, provided there are vacancies.

Sender

First name: _____

Last name: _____

Company/University: _____

Dept.: _____

Street: _____

Zip-code, city: _____

Phone: _____

Fax: _____

E-Mail: _____

Date, Signature: _____

Please complete and fax to +49(0)711-459600-29, send to DYNAmore GmbH, Industriestr. 2, D-70565 Stuttgart, Germany, or e-mail to seminar@dynamore.de.

Online registration at www.dynamore.de/ale-e

Declaration of consent to the use of personal data:

With your registration you allow us the use and the processing of your data for the seminar organization and promotional purposes. You may, at any time, revoke your consent by contacting DYNAmore GmbH via phone or in writing.