DYNA MORE

DYNAmore GmbH
Gesellschaft für FEM Ingenieurdienstleistungen

DYNAmore is dedicated to support engineers to solve nonlinear mechanical problems numerically. Our tools to model and solve the problems are the finite element software LS-DYNA as solver and LS-OPT for optimization.

We 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.

The majority of our customers are from the automotive and aerospace industry. Many companies value the services of DYNAmore. Customers of DYNAmore are:

- 13 of the 15 biggest car companies
- 11 of the 15 world wide biggest automotive suppliers
- All automotive OEM located in Germany
- 9 of the 10 largest German automotive suppliers
- The vast majority of German engineering services companies for crash simulation
- Almost all automotive OEM world wide use the dummy models developed by DYNAmore

The majority of suppliers for crash relevant parts in the automotive industry use LS-DYNA. LS-DYNA is likely to be the most frequently used explicit finite element code.

You find DYNAmore in Stuttgart, Dresden, Ingolstadt, Berlin, Langlingen, Zurich (CH), Linköping (S), Gothenburg (S) and Torino (I).

Organization

Date
17 March 2014, 13:30 - 17:00

Fees
Free of charge

Location
DYNAmore GmbH
Industriestr. 2, D-70565 Stuttgart, Germany
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Registration
Please use the registration form or register online at:
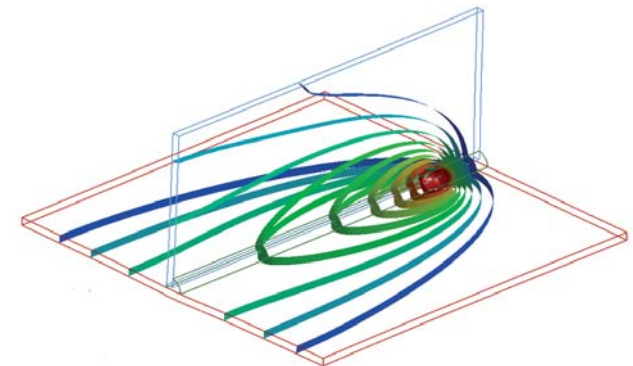www.dynamore.de/info-mp-e.

Invitation to the information day

Multiphysics with LS-DYNA

Thermomechanics, Electromagnetism,
Computational Fluid Mechanics

17 March, Stuttgart, Germany

Courtesy of Ingenieurbüro Tobias Loose, www.loose.at

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Multiphysics with LS-DYNA

The modern term „multiphysics" can be understood as a synonym for the solution of generally coupled problems. Following this, multiphysical applications are often classified according to the nature of their coupling in terms of a weak or strong interaction of the involved processes, methods, materials, physical fields or scales as well as combinations thereof.

Moreover, the interacting quantities may result in either volume- or surface-coupled problems. Thus, the success of multiphysical simulations strongly depends on the coupling abilities of the underlying simulation platform. In the case of LS-DYNA, this is achieved in a unified simulation environment.

The goal of this information day is to enlarge upon the basic difficulties with the set-up of multiphysical simulations and to provide suitable solutions by embracing the available discretization schemes in space and time in LS-DYNA. In particular, a great variety of finite elements in a Lagrangean, Eulerian or Arbitrary-Lagrange-Eulerian formulation can be coupled with boundary elements, isogeometric elements or even meshfree methods like SPH, EFG or DEM. Moreover, implicit as well as explicit time integration schemes are provided and can be combined depending on the strength of the coupling.

On the basis of practical examples, an overview on the current coupling abilities in LS-DYNA is given. Herein, the attention is mainly on the mutual interaction of solids and fluids with thermal and electromagnetical fields.

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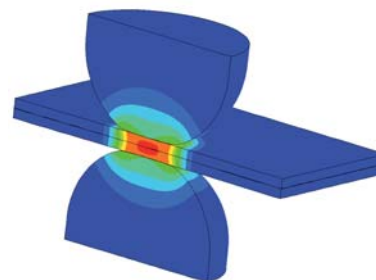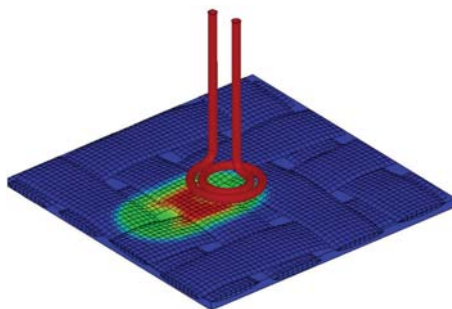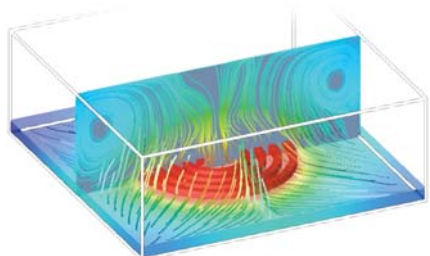
Courtesy of Institut für Verbundwerkstoffe GmbH

Agenda

13:30	Introduction N. Karajan (DYNAmore)
13:40	Multiphysical Solver Capabilities of LS-DYNA R7 I. Çaldichoury, F. Del Pin, P. L'Eplattenier, Z.-C. Zhang (LSTC)
14:20	Thermo-Mechanically Coupled Simulation with LS-DYNA T. Loose (Ingenieurbüro Tobias Loose); A. Erhart (DYNAmore)
14:40	Process Simulation of Resistance Spot Welding K. Anakiev, I. Lepenies (DYNAmore)
15:00	Break
15:30	Simulation of Thermoplastic Composite Induction Welding M. Duhovic, P. Mitschang, M. Maier (Institut für Verbundwerkstoffe GmbH); I. Çaldichoury, P. L'Eplattenier (LSTC)
16:00	Simulation of Hot Hydroforming with Incorporation of the Inductive Heating Process C. Scheffler (Fraunhofer IWU)
16:30	Coupled Simulation of the Fluid Flow and Conjugate Heat Transfer in Press Hardening Processes B. Boll, U. Göhner (DYNAmore); I. Çaldichoury (LSTC); T. Wicke (Volkswagen AG)
17:00	End

Registration

I herewith register for the information day (free of charge):
Multiphysics with LS-DYNA,
17 March 2014, Stuttgart, Germany.

Sender

First name: _____

Last name: _____

Company/University: _____

Dept.: _____

Street: _____

Zip-code, city: _____

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Online registration at www.dynamore.de/info-mp-e