

INVITATION – AGENDA

## 7<sup>th</sup> GERMAN LS-DYNA FORUM 2008

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30<sup>th</sup> SEPTEMBER - 1<sup>st</sup> OCTOBER 2008

BAMBERG, GERMANY



Courtesy of Adam Opel GmbH

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Dear users and interested parties,

DYNAmore kindly invites you to the 7<sup>th</sup> German LS-DYNA Forum, 30<sup>th</sup> September - 1<sup>st</sup> October, 2008. The conference will be held in the imperial city of Bamberg, awarded with the Unesco world cultural heritage title.

The conference is an ideal forum for LS-DYNA and LS-OPT users to share and discuss experiences, to obtain information on up-coming features and to learn more about new application areas. In total more than 80 papers will be presented by users and developers. Almost all presenters will use English slides and approximately 40% of the presentations will be held in English.

The conference will be accompanied by an exhibition featuring the latest software and hardware developments related to LS-DYNA and LS-OPT. In addition you will have the opportunity to attend a pre-conference seminar on „Introduction to LS-DYNA“ and „Introduction to LS-DYNA - Advanced Topics“.

We are looking forward welcoming you at the conference.

Yours sincerely

DYNAmore GmbH



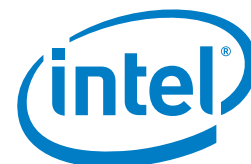
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Thursday, 25<sup>th</sup> September  
- Friday, 26<sup>th</sup> September

Pre-Conference Seminar:  
Introduction to LS-DYNA (in English)

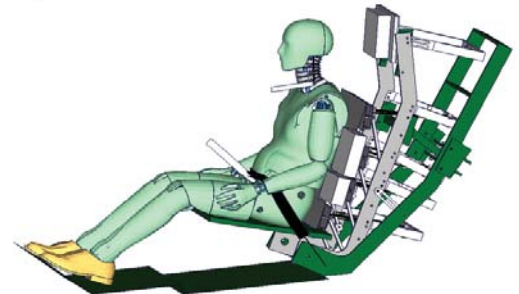
Monday, 29<sup>th</sup> September

Pre-Conference Seminar:  
Introduction to LS-DYNA – Advanced Topics (in English)

Monday, 29<sup>th</sup> September

06:00 - 09:00 pm  
from 06:00 pm

Registration  
Welcome reception



Tuesday, 30<sup>th</sup> September

from 08:00 am

Registration

09:00 - 09:10 am

Plenary

Welcome

09:10 - 10:15 am

Plenary

Keynote presentations

10:50 - 12:30 am

Plenary

Keynote presentations

12:30 - 01:50 pm

Lunch

01:50 - 03:10 pm

Parallel

Crash I  
(Connections)

Metal  
Forming I

Material I  
(Plastics)

IT / CAE  
Processes I

03:40 - 05:00 pm

Parallel

Crash II  
(Conn./Failure)

Metal  
Forming II

Material II  
(Composites)

IT / CAE  
Processes II

05:20 - 06:40 pm

Parallel

Crash III  
(Barriers)

Metal  
Forming III

Various  
Applications

Workshop  
Optimization

from 08:00 pm

Gala dinner

Exhibition

Wednesday, 1<sup>st</sup> October

08:20 - 09:20 am

Parallel

Passive  
Safety I

Crash IV  
(Damage)

Optimization I

Metal  
Forming IV

09:50 - 10:50 am

Parallel

Passive  
Safety II

Material III  
(Plastics)

Optimization II

Workshop  
eta/DYNAform

11:20 - 12:20 am

Parallel

Passive  
Safety III

Validation/Veri-  
fication/Calibr.

Optimization III

Workshop  
Primer

12:20 - 02:00 pm

Lunch

02:00 - 03:10 pm

Plenary

Keynote presentations

03:30 - 04:45 pm

Plenary

Keynote presentations

04:45 pm

Farewell

Exhibition

## PLENARY

09:00 - 09:10 am

## WELCOME / KEYNOTE PRESENTATIONS

### Welcome

U. Franz (DYNAmore GmbH)

09:10 - 09:45 am

### Recent Developments in LS-DYNA – I (E)

J. O. Hallquist (LSTC)

09:45 - 10:15 am

### Herausforderung Technische Akustik: Was kann man heute berechnen?

Prof. O. von Estorff (Universität Hamburg)

10:15 - 10:45 am

Coffee break

10:50 - 11:00 am

### Digitale Simulation im Kontext des Produktlebenszyklus

J. Philippeit (Siemens PLM Software)

11:00 - 11:30 am

### Advanced Methods for Safety Simulation in Vehicle Development

S. Frik, B. Gosolits, R. Schirmer (Adam Opel GmbH)

11:30 - 12:00 am

### CAE-Prozessintegration und Optimierung in der Fahrzeugentwicklung bei Audi

B. Mlekusch (Audi AG)

12:00 - 12:30 am

### Aktueller Stand und notwendige Weiterentwicklungen bei der Blechumformsimulation

Prof. K. Roll (Daimler AG)

12:30 - 01:50 pm

Lunch

## PARALLEL

## CRASH I – CONNECTIONS

01:50 - 02:10 pm

### Simulation of Spot Welds and Welds Seams in Press-Hardened Steel Assemblies

S. Klimek (Adam Opel GmbH)

02:10 - 02:30 pm

### Usage of Cohesive Elements in Crash Analysis of Large, Bonded Vehicle Structures – Experimental Tests and Simulation

S. Marzi, M. Brede, O. Hesebeck (IFAM Bremen); L. Ramon-Villalonga (Adam Opel GmbH); F. Kleiner (Henkel KGaA)

02:30 - 02:50 pm

### Investigation of Spot Weld Behavior Using Detailed Modeling Technique

F. Seeger, G. Michel, M. Blanquet (Daimler AG)

02:50 - 03:10 pm

### Kontinuumsmechanische Modellierung von Stahlblechklebverbindungen für die FE-Crashanalyse

Prof. A. Matzenmiller, F. Burbulla (Universität Kassel)

03:10 - 03:40 pm

Coffee break

## PARALLEL

## CRASH II – CONNECTIONS, FAILURE

03:40 - 04:00 pm

### Enhancement of Spot Weld Modeling using MAT 100 DA

F. Seeger, M. Feucht (Daimler AG); G. Dumitru, T. Graf (DYNAmore GmbH)

04:00 - 04:20 pm

### Modelling of Bolts Under Dynamic Loads

U. Sonnenschein (Daimler AG)

04:20 - 04:40 pm

### Fracture Prediction for Crashworthiness Assessment of Aluminum Bumper Systems

C. Leppin, M. Kutscher, M. Feuerstein (Alcan Ltd.); G. Oberhofer (Matfem Partnerschaft Dr. Gese & Oberhofer)

04:40 - 05:00 pm

### Efficient Determination of Strain Rate and Fracture Parameters for Automotive Crash Simulation with LS-DYNA

J. Winklhofer, G. Trattig, H. Schluder (Kompetenzzentrum – Das virtuelle Fahrzeug GmbH); B. Fellner (Magna Steyr AG & Co KG)

05:00 - 05:20 pm

Break

## PARALLEL

## CRASH III – BARRIERS

05:20 - 05:40 pm

### Development of Advanced Frontal Offset Deformable Barrier (E)

C.-H. Lin, R. R. Mayer, J. T. Wang (General Motors Corp.); D. Strehl (Adam Opel GmbH)

05:40 - 06:00 pm

### Proving a New Method for Modelling Aluminium Honeycomb Based Crash Barriers in Lateral and Frontal Crash Loadcases in FEM Calculation

T. Jost (Kompetenzzentrum – Das virtuelle Fahrzeug GmbH); B. Fellner (Magna Steyr AG & Co. KG)

06:00 - 06:20 pm

### Development of an Impact Absorber for Roadside Barriers (E)

C. M. Vieira (ESTG – Leiria Polytechnic Institute); H. A. Almeida, I. S. Ferreira, J. O. Vasco, P. J. Bártolo, R. M. Ruben, S. P. Santos (INDEA Centre for Rapid and Sustainable Product Development)

06:20 - 06:40 pm

### Comparison of Measurement and Simulation of Static and Dynamic Tests of Metallic Hollow Sphere Structures

W. Rimkus, Prof. M. Merkel (FH Aalen); Prof. A. Öchsner (Technical University of Malaysia)

from 08:00 pm

## GALA DINNER

## METAL FORMING I

### Springback Simulation with Complex Hardening Material Models (E)

L. Keßler, J. Gerlach, M.-S. Aydin (Thyssen Krupp Steel AG)

### Considering Tool and Press Elasticity within the Forming Simulation and Experimental Validation

R. Struck, M. Medricky (Volkswagen AG)

### Springback Compensation for Incremental Sheet Metal Forming Applications

J. Zettler (EADS GmbH)

### Numerical Modelling of Cross Roll Straightening

A. Mutrux, B. Berisha, B. Hochholding, Prof. P. Hora (ETH Zürich)

## METAL FORMING II

### Superplastische Blechumformung von Magnesiumlegierungen

J. Kappes, Prof. M. Liewald (Universität Stuttgart)

### Berücksichtigung der Gefügeumwandlung in der numerischen Simulation des Presshärtens

Prof. B.-A. Behrens, P. Olle (Universität Hannover)

### Praxiserprobte Biegesimulation als Vorformoperation für den IHU-Prozess

T. Bach (SimuForm GmbH)

### New Features in eta/DYNAFORM 5.7 (E)

J. He (Engineering Technology Associates, Inc.)

## METAL FORMING III

### Prediction of Cutting Forces in Metal Cutting, Using the Finite Element Method, a Lagrangian Approach (E)

M. F. Villumsen (Aalborg University)

### Simulation of Metal Cutting, Using Smooth Particle Hydrodynamics (E)

M. F. Villumsen (Aalborg University)

### Recent Advances and New Developments in Hot Forming Simulation with LS-DYNA

D. Lorenz, A. Haufe (DYNAmore GmbH); A. Shapiro (LSTC)

## HARDWARE AND SOFTWARE EXHIBITORS

4a engineering GmbH	Fraunhofer Institut SCAI	MSC.Software GmbH
Altair Engineering GmbH	GNS Systems GmbH	NAFEMS GmbH
Arup	GNS mbH	NEC Deutschland GmbH
Carhs GmbH	Hewlett Packard GmbH	Siemens PLM Software
DYNAmore GmbH	IBM Deutschland GmbH	T-Systems Enterprise Services GmbH
Engineous Software GmbH	Inprosim GmbH	Tecosim GmbH
EnginSoft SpA	Intel GmbH	transtec ag
ESI GmbH	Lasso Ingenieurgesellschaft mbH	...
FE-Design GmbH	Microsoft GmbH	

(July 2008)

### MATERIAL I – PLASTICS

#### Validierung des Deformationsverhaltens von Kunststoffen unter mehrachsiger Beanspruchung

A. Ratai, Prof. S. Kolling (FH Gießen); A. Haufe (DYNAmore GmbH); M. Feucht (Daimler AG); P. Du Bois (Consultant)

#### Characterization of Polyolefins for Design Under Impact: From True Stress/ Local Strain Measurements to the FE-Simulation with LS-DYNA Mat. SAMP-1 (E)

M. Nutini, M. Vitali (Basell Poliolefine Italia S.r.l.)

#### Kurzfaserverstärkte Kunststoffbauteile – Einfluss der prozessbedingten Faserorientierung auf die Strukturmechanik

P. Reithofer, M. Fritz (4a engineering GmbH)

#### Modelling and Crash Simulation of Long-Fibre-Reinforced Thermoplastics

T. Seelig (Fraunhofer IWM); A. Latz (Fraunhofer ITWM); S. Sanwald (Fraunhofer ICT)

### MATERIAL II – COMPOSITES

#### Untersuchungen zur Modellierung von Strukturen aus FKV unter Crashbelastung mit Hilfe von Mehrschalenmodellierungen

M. Holzapfel, G. Kopp (Deutsches Zentrum für Luft- und Raumfahrt); P. Adamski, H. Eisenhans (Dr. Ing. h.c. F. Porsche AG)

#### Simulation of Low Velocity Impact on Composite Plates with Compressive Preload

S. Heimbs, S. Heller, P. Middendorf (EADS GmbH)

#### Simulation des Impaktverhaltens von CFK-Sandwichpanel unter Vorlast

J. Weiße, F. Hähnel, Prof. K. Wolf (TU Dresden)

#### Mesomechanical Modelling of Failure Mechanisms in Composite Structures Using LS-DYNA 971

D. Moncayo, T. Erhart (DYNAmore GmbH); Prof. K. Schweizerhof (DYNAmore GmbH / Universität Karlsruhe)

### VARIOUS APPLICATIONS

#### Lebensdaueranalyse der Fahrertür durch Simulation des Türendauerlaufes mit LS-DYNA und FEMFAT

B. Kopp, H. Pfitzer (Daimler AG)

#### Structural Dynamic Response of a Track Chain Complete Under-carriage System Using a Virtual Proving Ground Approach (E)

M. Perillo, V. Primavera, G. Bonello (EnginSoft SpA); M. Cavedoni (Italtractor ITM Spa)

#### Simulation of Rotor-Blade for the Current Generation System Using FSI Capability in LS-DYNA (E)

Ju. Kim, Jo. Kim (Oceanspace Inc.)

#### Reinforced Concrete Slab Subjected to Close-in Explosion (E)

F. Wang, Y. K. M. Wan, O. Y. K. Chong, C. H. Lim (Defense Science and Technology Agency)

### IT / CAE PROCESSES I

#### Recent Developments in Crash Pre-Processing with ANSA (E)

L. Rorris (Beta CAE Systems S.A.)

#### “Mature Concepts” Through Integrated CAD and CAE Processes in Catia V5 with LS-DYNA

H. Doepner, U. Jankowski, M. Sans (Tecosim GmbH); M. Nelsen, I. Phillips (Force Five AG)

#### HyperCrash – a Highly-Tuned Modeling Environment for Crash Analysis and Safety Evaluation

C. Alscher (Altair Engineering GmbH)

#### Visual-Environment

Integrated Pre and Post Environment for LS-DYNA  
S. H. Shetty, V. Ganesan, S. C. Sivalingam, M. Sommer (ESI Group)

### IT / CAE PROCESSES II

#### Eine CAE Infrastruktur für LS-DYNA unter Verwendung von Microsoft Windows HPC Server 2008

T. Groß, J. Martini (GNS Systems GmbH)

#### CAE Berechnungen im Jahre 2008, ein Zwischenbericht

A. Bömelburg (IBM Deutschland GmbH)

#### Abläufe in der Berechnung durch effizientes Datenmanagement verkürzen

J. Philippeit, Z. Petrovic (Siemens PLM Software)

#### Challenges in High Performance Computing (E)

O. Tennert (transtec ag)

### WORKSHOP – STRUCTURAL OPTIMIZATION

#### Application of Structural Optimization with GENESIS, LS-OPT und D-SPEX

cont'd

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cont'd

### PARALLELE

01:50 - 02:10 pm

02:10 - 02:30 pm

02:30 - 02:50 pm

02:50 - 03:10 pm

03:10 - 03:40 pm

### PARALLELE

03:40 - 04:00 pm

04:00 - 04:20 pm

04:20 - 04:40 pm

04:40 - 05:00 pm

05:00 - 05:20 pm

### PARALLELE

05:20 - 05:40 pm

05:40 - 06:00 pm

06:00 - 06:20 pm

06:20 - 06:40 pm

# AGENDA – WEDNESDAY, 1<sup>ST</sup> OCTOBER 2008

## PARALLEL

### PASSIVE SAFETY I

- 08:20 - 08:40 am **Ideas on Applying Very Fine Models in Dummy Model Development**  
A. Gromer, J. Zschieschak, U. Franz (DYNAmore GmbH);  
M. Walz (Mercedes Car Group, Daimler AG)
- 08:40 - 09:00 am **Enhancements in FTSS Dummy Model Development and Outlook (E)**  
F. Zhu (FTSS, Inc.)
- 09:00 - 09:20 am **Oasys Primer – An Update (E)**  
R. Miles (Arup)

### CRASH IV – DAMAGE

- On Calibrating Advanced Damage Models Using Sheet Metal Coupon Tests**  
H. Ebelsheiser, F. Neukamm, M. Feucht (Daimler AG);  
A. Haufe (DYNAmore GmbH)
- Consistent Damage Modelling in the Process Chain of Forming to Crashworthiness Simulations**  
F. Neukamm, M. Feucht, A. Haufe (Daimler AG)
- Quicker Process to Consider Strain Hardening for Crash Analysis Using HYCRASH (E)**  
S. Endoh, T. Miyachi, Y. Umezu (Japan Research Institute, Ltd.)

09:20 - 09:50 am Coffee break

## PARALLEL

### PASSIVE SAFETY II

- 09:50 - 10:10 am **The Use of LS-DYNA Implicit for Seat Comfort Assessment – H-Point Prediction Using SAE J826 Dummy and Pressure Mapping (E)**  
T. Zeguer, B. Feng, D. Coleman (Jaguar Cars Ltd.)
- 10:10 - 10:30 am **Development of Hybrid III Finite Element Models at NCAC (E)**  
Prof. S. Kan, P. Mohan (George Washington University / NHTSA)
- 10:30 - 10:50 am **WorldSID Dummy Model Development in Cooperation with German Automotive Industry**  
A. Gromer, S. Stahlschmidt (DYNAmore GmbH);  
P. Schuster (Dr. Ing. h.c. F. Porsche AG)

### MATERIAL III – PLASTICS

- Constitutive Modeling of Thermoplastic Materials Using the Modified Boyce-Raghava model (MBR) (E)**  
M. Polanco-Loria, T. Berstad (SINTEF);  
A. H. Clausen, Prof. O. S. Hopperstad (NTNU)
- Determination of the Behaviour of Thermoplastics at High Strain-Rates Using the Invariant Theory**  
F. Becker, A. Kraatz (DKI – Deutsches Kunststoff-Institut)
- Kunststoffedern unter Langzeitbelastung – Anwendung viskoelastischer Materialmodelle**  
T. Wimmer, M. Fritz (4a engineering GmbH);  
W. Bretis (Spirello Schlafsysteme GmbH)

10:50 - 11:20 am Coffee break

## PARALLEL

### PASSIVE SAFETY III

- 11:20 - 11:40 am **Development of Simulation Based Side Airbag Algorithm**  
C.-H. Lin (General Motors Corp.);  
P. Erb, T. Kiefer, S. Frik (Adam Opel GmbH)
- 11:40 - 12:00 am **The Use of Gas Dynamic Simulation for Curtain Airbag Deployment through Interior Trims**  
T. Zeguer, B. Feng, D. Coleman (Jaguar Cars Ltd.)

### VALIDATION / VERIFICATION / CALIBRATION

- Is Your Mesh Refined Enough?**  
**Estimating Discretization Error Using GCI (E)**  
L. Schwer (Schwer Engineering & Consulting Services)
- Simulation of Motorcycle Helmets Impacts Using LS-DYNA (E)**  
A. Mercier (ISIB – Institut Supérieur Industriel de Bruxelles)
- Numerical Analysis of Metallic Hollow Sphere Structures (E)**  
M. Vesenjak, Prof. Z. Ren (University of Maribor); T. Fiedler (University of Newcastle); Prof. A. Öchsner (Technical University of Malaysia)

12:20 - 02:00 pm Lunch

## PLENARY

### KEYNOTE PRESENTATIONS

- 02:00 - 02:30 pm **Ship Safety and LS-DYNA, Some Application Examples**  
L. Zhang (Germanischer Lloyd AG)
- 02:30 - 03:00 pm **Auslegung von Rückhaltesystemen**  
K. Elsässer, A. Ruf, S. Gargallo, L. Kübler (TRW GmbH)
- 03:00 - 03:10 pm **New Developments in Processor and Cluster Technology for CAE Applications (E)**  
U. Becker-Lemgau (Intel GmbH)
- 03:10 - 03:30 pm **Coffee break**
- 03:30 - 04:00 pm **Prozessoptimierung aus der Sicht eines Entwicklungsdienstleisters**  
M. Hog, A. Benninger, P.-E. Munch (EDAG GmbH)
- 04:00 - 04:45 pm **Recent Developments in LS-DYNA – II (E)**  
J. Hallquist (LSTC)
- 04:45 pm **Farewell**  
T. Münz (DYNAmore GmbH)

**OPTIMIZATION I**

**Structural Health Monitoring Under Consideration of Uncertain Data**  
 C. Jenkel, Prof. W. Graf, J.-U. Sickert (TU Dresden)

**Global Sensitivity Analysis in View of Nonlinear Structural Behavior**  
 U. Reuter (TU Dresden); M. Liebscher (DYNAmore GmbH)

**Impetus II – Neue Wege dynamischer Materialcharakterisierung von Schaumwerkstoffen**  
 O. Graf, K. Witowski (DYNAmore GmbH);  
 P. Reithofer, M. Fritz (4a engineering GmbH)

**METAL FORMING IV**

**Simulation of Metal Forming Processes Under Consideration of Imprecise Probabilities**  
 S. Pannier, Prof. W. Graf (TU Dresden);  
 H. Müllerschön, M. Liebscher (DYNAmore GmbH)

**Metal Forming Setup in LS-PREPOST (E)**  
 Q. Yan (LSTC)

**Roller Hemming Application in LS-PREPOST (E)**  
 Y. Zhao (LSTC)

PARALLEL

08:20 - 08:40 am

08:40 - 09:00 am

09:00 - 09:20 am

09:20 - 09:50 am

**OPTIMIZATION II**

**New Developments in LS-OPT Version 3.4 (E)**  
 N. Stander, T. Goel, W. J. Roux (LSTC)

**Optimization of a Crash Management System Considering Multiple Load Cases Using ANSA and LS-OPT**  
 M. Feuerstein (Alcan Ltd.);  
 K. Witowski, H. Müllerschön (DYNAmore GmbH)

**Automating and Organizing the Optimization Process Using ANSA – LS-OPT – META. A Bumper Optimization Case Study (E)**  
 G. Korbetis (Beta CAE Systems S.A.)

**WORKSHOP – eta/DYNAform**

**Applications and New Developments in eta/DYNAform**

cont'd

cont'd

PARALLEL

09:50 - 10:10 am

10:10 - 10:30 am

10:30 - 10:50 am

10:50 - 11:20 am

**OPTIMIZATION III**

**SuperLIGHT-CAR – die Multi-Material-Karosserie**  
 M. Lesemann, C. Sahr (IKA – RWTH Aachen)

**Topology Optimization Based on Graph Theory of Crash Loaded Flight Passenger Seats**  
 Prof. A. Schumacher, C. Olschinka (HAW Hamburg)

**Efficient Topology, Topometry and Sizing Optimisation for LS-DYNA Analysis Problems – Coupling LS-DYNA to VR&D GENESIS (E)**  
 M. Gambling, D. Salway (GRM Consulting Ltd.)

**WORKSHOP – PRIMER**

**Applications and New Developments in PRIMER**

cont'd

cont'd

PARALLEL

11:20 - 11:40 am

11:40 - 12:00 am

12:00 - 12:20 pm

12:20 - 02:00 pm



Hardware and Software Exhibition

# PRE-CONFERENCE SEMINARS IN ENGLISH

## Introduction to LS-DYNA

This introductory seminar provides a quick yet comprehensive overview of how to use LS-DYNA.

The seminar is designed for simulation engineers intending to use LS-DYNA as an FE-code to simulate general non-linear problems. No prior knowledge required.

LS-DYNA is mainly used to simulate crashes, metal forming, impact cases or other highly non-linear problems. In addition, the application of LS-DYNA/explicit offers benefits when it comes to simulating highly non-linear static problems in which implicit methods would not be appropriate due to convergence issues.

Seminar attendees will also carry out exercises on their own to get an even better understanding of the use of LS-DYNA.

### Content

- Which problems can be solved using LS-DYNA?
- What is the difference between implicit and explicit time integration?
- Which element types are available?
- How to carry out crash and other dynamic simulations
- Which input and output files are provided, and what data do they contain?
- How to perform quasi-static simulations?
- How to analyse results

### Lecturer

Dr. T. Graf (DYNAmore GmbH)

### Date / Duration

September 25 - 26, 9:00am - 5:00pm

### Location

DYNAmore headquarters Stuttgart

### Language

English

### Costs

740,- Euro / 640,- Euro for 7<sup>th</sup> LS-DYNA Forum attendees + VAT if applicable

### Seminar registration

The seminars can be booked separately. For registration please use registration form, send an e-mail to [miriam.lang@dynamore.de](mailto:miriam.lang@dynamore.de) or call us at +49 (0) 7 11 - 45 96 00 - 0. As response we will send you a confirmation.

### Questions

Please contact Dr. Heiner Müllerschön, Tel. +49 (0) 7 11 - 45 96 00 - 20, [hm@dynamore.de](mailto:hm@dynamore.de), for further information.

## Introduction to LS-DYNA – Advanced Topics

This one-day introduction class to LS-DYNA deals with advanced topics, such as material modelling and contact formulations.

There is a variety of different material models available in LS-DYNA which allow for a wide range of applications. Their knowledgeable use is one of the key ingredients of a reliable finite element simulation. It is the objective of this seminar to give practical guidelines on how to use the most commonly applied material formulations in LS-DYNA.

In addition, the seminar gives an overview of the possibilities, application areas and limits of particular contact formulations. The course will point out the possibilities of troubleshooting, if the behavior of a contact is not what it is expected to be.

### Content

- Basic aspects of material modeling in the context of the theory of large deformations
- Some remarks on material modeling in LS-DYNA in general
- Most commonly used models in LS-DYNA (elastoplastic models, viscoelastic material models, rate-dependent material formulations)
- Selection of the correct contact formulation
- Troubleshooting for contacts
- Penetration, quality check for contacts
- Evaluation of example problems

Prerequisite for this class is the seminar "Introduction to LS-DYNA" or appropriate experience with LS-DYNA. Beginners and more experienced users will benefit from this class.

### Lecturer

Dr. A. Haufe (DYNAmore GmbH)

### Date / Duration

September 29, 9:00am - 5:00pm

### Location

DYNAmore headquarters Stuttgart

### Language

English

### Costs

370,- Euro / 320,- Euro for 7<sup>th</sup> LS-DYNA Forum attendees + VAT if applicable



Courtesy of Daimler AG

Please complete and fax to  
or copy or send to

Fax +49 (0) 7 11 - 45 96 00 29  
DYNAmore GmbH, Industriestr. 2, D-70565 Stuttgart, Germany

I register my attendance for the

7<sup>th</sup> LS-DYNA FORUM 2008, 30<sup>th</sup> September - 1<sup>st</sup> October 2008, Bamberg, Germany.

Industry participant: 520,- Euro / delegate (early booking before 25<sup>th</sup> July 2008: 470,- Euro)

Academic (university employees): 360,- Euro / delegate (early booking before 25<sup>th</sup> July 2008: 320,- Euro)

I will attend the informal welcome in the evening of the 29<sup>th</sup> September 2008  
(included in registration fee).

We intend to participate in the hardware and software exhibition. Please send us information for exhibitors.

We are interested in sponsoring the conference. Please send information for sponsors.

I register for the Pre-conference seminar

„Introduction to LS-DYNA“, 25<sup>th</sup> - 26<sup>th</sup> September 2008, Stuttgart, Germany

740,- Euro / delegate (640,- Euro for delegates of the 7<sup>th</sup> LS-DYNA Forum)

„Introduction to LS-DYNA – Advanced Topics“, 29<sup>th</sup> September 2008, Stuttgart, Germany

370,- Euro / delegate (320,- Euro for delegates of the 7<sup>th</sup> LS-DYNA Forums)

All costs + VAT if applicable

SENDER

Company / University: \_\_\_\_\_

Department: \_\_\_\_\_

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Fax: \_\_\_\_\_ E-mail: \_\_\_\_\_

Date: \_\_\_\_\_ Signature: \_\_\_\_\_

# REGISTRATION FORM

Please complete and fax to  
or copy or send to

Fax +49 (0) 7 11 - 45 96 00 29  
DYNAmore GmbH, Industriestr. 2, D-70565 Stuttgart, Germany

- I register my attendance for the  
7<sup>th</sup> LS-DYNA FORUM 2008, 30<sup>th</sup> September - 1<sup>st</sup> October 2008, Bamberg, Germany.  
Industry participant: 520,- Euro / delegate (early booking before 25<sup>th</sup> July 2008: 470,- Euro)  
Academic (university employees): 360,- Euro / delegate (early booking before 25<sup>th</sup> July 2008: 320,- Euro)
- I will attend the informal welcome in the evening of the 29<sup>th</sup> September 2008  
(included in registration fee).
- We intend to participate in the hardware and software exhibition. Please send us information for exhibitors.
- We are interested in sponsoring the conference. Please send information for sponsors.

### I register for the Pre-conference seminar

- „Introduction to LS-DYNA“, 25<sup>th</sup> - 26<sup>th</sup> September 2008, Stuttgart, Germany  
740,- Euro / delegate (640,- Euro for delegates of the 7<sup>th</sup> LS-DYNA Forum)
- „Introduction to LS-DYNA – Advanced Topics“, 29<sup>th</sup> September 2008, Stuttgart, Germany  
370,- Euro / delegate (320,- Euro for delegates of the 7<sup>th</sup> LS-DYNA Forums)

All costs + VAT if applicable

### SENDER

Company / University: \_\_\_\_\_

Department: \_\_\_\_\_

Name: \_\_\_\_\_ First name: \_\_\_\_\_

Street: \_\_\_\_\_ Postal code, city \_\_\_\_\_

Country: \_\_\_\_\_ Phone: \_\_\_\_\_

Fax: \_\_\_\_\_ E-mail: \_\_\_\_\_

Date: \_\_\_\_\_ Signature: \_\_\_\_\_



Welcome Kongress Hotel Bamberg, Germany

**Venue**

Welcome Kongress Hotel Bamberg  
 Mußstraße 7, D-96047 Bamberg, Germany  
 Tel. +49 (0) 9 51 - 70 00 - 0  
 Fax +49 (0) 9 51 - 70 00 - 5 16  
 www.welcome-kongresshotel-bamberg.de

**Accommodation**

At the Welcome Kongress Hotel Bamberg we have arranged a special room rate for attendees until 4<sup>th</sup> August 2008 (single room 95,- Euro / Night incl. Breakfast). Please reserve the hotel room by yourself. Please use the keyword „DYNAmore“ when you book your room.

**Registration fees**

Industry participant:  
 520,- Euro / delegate (470,- Euro\*)  
 Academic (university employees):  
 360,- Euro / Teilnehmer (320,- Euro\*)  
 \* early booking before 25<sup>th</sup> July 2008

Fee includes: conference attendance, conference proceedings plus CD, gala dinner, lunches, coffee breaks, welcome reception at September 29, 2008.  
 All costs + VAT if applicable

**Pre-Conference seminars**

- „Introduction to LS-DYNA“  
 25<sup>th</sup> - 26<sup>th</sup> September 2008, Stuttgart, Germany
  - „Introduction to LS-DYNA – Advanced Topics“  
 29<sup>th</sup> September 2008, Stuttgart, Germany
- Please find further information on page 7.

**Hardware and software exhibition**

Please request further information.

**Conference language**

German and English

**Registration / Confirmation**

Please use attached registration form (page 9/10) or register online at <http://www.dynamore.de/forum.php> an.

**Contact**

DYNAmore GmbH  
 Miriam Lang  
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 D-70565 Stuttgart  
 Tel. +49 (0) 7 11 - 45 96 00 - 0  
 Fax +49 (0) 7 11 - 45 96 00 - 29  
 e-mail: info@dynamore.de

Please find more information:  
<http://www.dynamore.de>

**Travel information**

**Car**

*West (from Frankfurt or Würzburg)*

Motorway A3 towards Würzburg/Nürnberg until the exit Bamberg; Take the B 505 until exit Memmelsdorf/Scheßlitz, go left towards Bamberg, follow the Memmelsdorfer Straße approximately 5 km. after the first big bridge take a left towards „Konzert- und Kongresshalle“; after approximately 500 meters on the right side is the entrance to the hotel.

*South (Munich or Nuremberg)*

Motorway A9 until junction Nürnberg there take the A3 towards Würzburg until junction Fürth/Erlangen, then take the A73 towards Bamberg. Take exit Memmelsdorf/Gartenstadt; left towards Bamberg; follow the Memmelsdorfer Straße approximately 5 km. After the first big bridge take a left towards „Konzert- und Kongresshalle“ after approximately 500 meters on the right side is the entrance to the hotel.

*East (Berlin or Bayreuth)*

Motorway A9 until motorway junction Bayreuth-Kulmbach, then take the A70 towards Bamberg until exit Hallstadt; left towards Bamberg, at the fourth traffic light, (across from VAG dealer), right into the Magazinstraße; after the second big bridge left towards „Konzert- und Kongresshalle“, after approximately 500 meters on the right side is the entrance to the hotel.

*North (Kassel or Schweinfurt)*

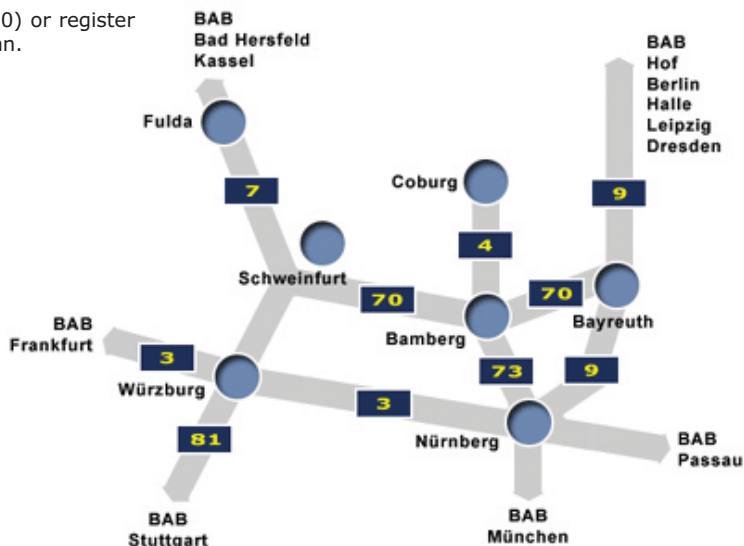
Motorway A7 until the exit Schweinfurt-Werneck, then on the A70 towards Bamberg until exit Hallstadt; right towards Bamberg, at the fourth traffic light, (across from VAG dealer), right onto the Magazinstraße; after the second big bridge left towards „Konzert- und Kongresshalle“ after approximately 500 meters on the right side is the entrance to the hotel.

**Train**

ICE station on route Berlin - Nuremberg - Munich.

**Plane**

Airport Munich, Frankfurt, Nuremberg.





DYNA*more* GmbH

Headquarters

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