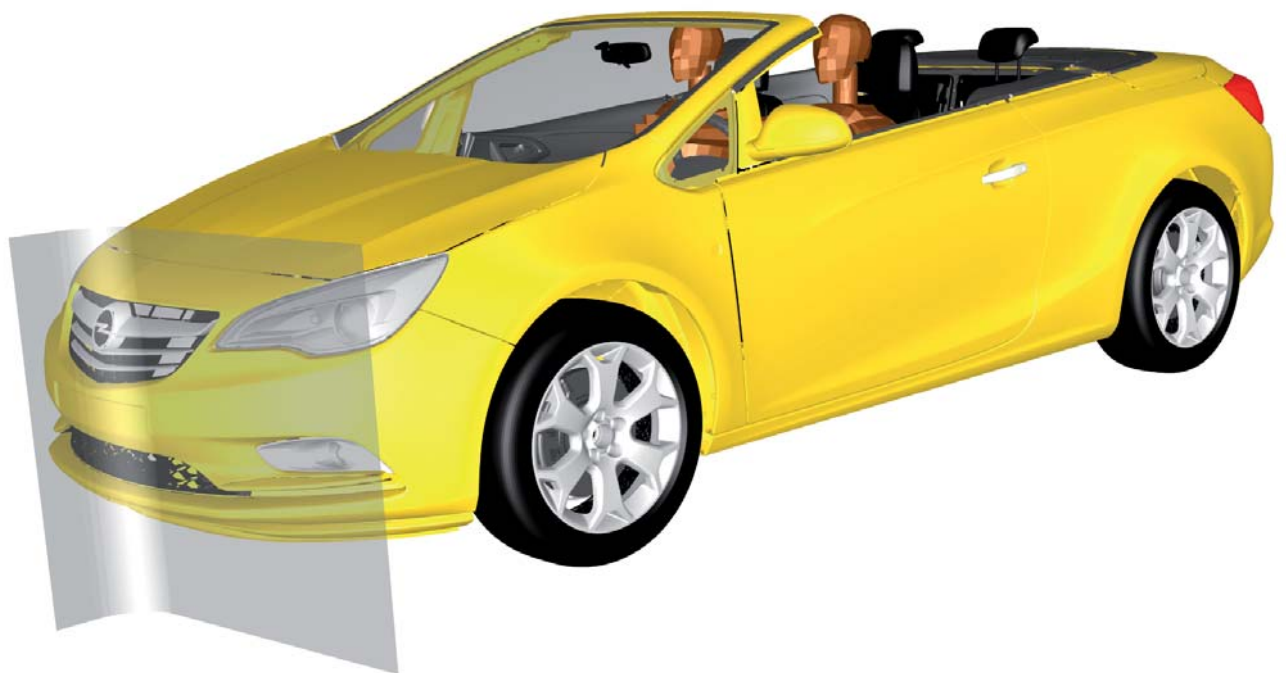


INVITATION – AGENDA

13th LS-DYNA FORUM 2014

6 - 8 OCTOBER 2014, BAMBERG, GERMANY



Courtesy of Adam Opel AG

PREMIUM SPONSORS



Dear LS-DYNA user community,

with this agenda we would like to cordially invite you to our 13th LS-DYNA Forum from 6 - 8 October in Bamberg, which for the first time is taking place on two and a half days. In this way we respond to the feedback of attendees of former LS-DYNA conferences and are now able to offer an uncongested agenda with more than 80 technical presentations and 10 workshops on frequently requested topics.

Following this, the LS-DYNA Forum is not only an ideal place to exchange your experiences and findings with other users across the LS-DYNA product range as well as the associated CAE process chains. It will also give you the opportunity for a straightforward introduction to application areas of LS-DYNA, which you might have wanted to know about for a long time.

The conference starts with the half-day LS-DYNA Developer Forum where you will directly receive information from software developers about already available features and future developments in LS-DYNA. The second part of the conference is the LS-DYNA User Forum where other LS-DYNA users stemming from various branches of industry will do their best to inspire you with overview lectures and technical presentations about their fields of application. It is remarkable how the application driven research of new material and failure models is still an important trend in simulation. This can be measured by the great number of presentations about the simulation of plastics, composites and ultra high-strength steels as well as joining techniques using glued and welded connections.

As always, there is an accompanying exhibition of selected hardware and software manufacturers, which offers an exquisite chance to gather information on the latest news and trends around LS-DYNA. Last but not least, several employees of the DYNAmore will be available for your disposal to answer your questions or simply provide tips and tricks on the LS-DYNA product range.

In addition to the Forum we are pleased to offer you 8 special English spoken seminars on LS-DYNA, which are held by experienced instructors who work primarily in research and development. The seminars need to be booked separately – participants of the LS-DYNA forum receive a 10% discount on the seminar fees. More information on this can be found at the end of this booklet.


We hope that we have stimulated your interest and are looking forward to seeing you in Bamberg.

Sincerely yours



SPONSORS

Premium



Gold



Silver



Monday, 6 October

Exhibition	from 11:00		Registration		
	13:00 - 15:15	Parallel	Developer presentations	Workshop: Contacts	Workshop: Failure Metals
	16:00 - 18:00	Parallel	Developer presentations	Workshop: Connections	Workshop: Modeling Plastics
	from 18:00	Exhibition	Beverages and snacks		

Tuesday, 7 October

Exhibition	from 08:00		Registration			
	09:00 - 10:15	Plenary	Keynote presentations			
	10:50 - 12:30	Plenary	Keynote presentations			
	12:30 - 13:50	Lunch break				
	13:50 - 15:10	Parallel sessions	Crash I (Materials)	Processes I (Applications)	CAE Processes I	
	15:40 - 16:40	Parallel sessions	Crash II (Materials/Appl.)	Processe II (Rollen, Schweißen)	Materials I (Plastics)	Workshop: SCALE SDM
	17:20 - 18:20	Parallel sessions	Crash III (Experiments)	Processes III (Thermomech.)	Materials II (Plastics)	Workshop: Dummy
	19:00 20:00	Exhibition Hegelsaal	Get together Gala dinner			

Wednesday, 8 October

Exhibition	08:20 - 09:20	Parallel sessions	IT / Hardware	Materials III (Plastics FRP)	Methods I	Workshop: Crash
	09:50 - 10:50	Parallel sessions	Passive Safety (Pre/Postproc.)	Materials IV (Plastics FRP)	Methods II	Workshop: LS-OPT
	11:20 - 12:20	Parallel sessions	Human models (Safety/Comfort)	Materials V (Metals)	Methods III	Workshop: DYNAtools
	12:20 - 13:40	Lunch break				
	13:40 - 15:00	Parallel sessions	Pedestrian Safety Dummies	Materials VI (Failure)	Optimization	Workshop: Implicit
	15:30 - 16:00	Plenary	Keynote presentations			



Welcome Kongresshotel Bamberg, Germany

Venue

Welcome Kongresshotel Bamberg
Mußstraße 7

D-96047 Bamberg, Germany

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Fax +49 (0) 9 51 - 70 00 - 5 16

E-Mail: info.bak@welcome-hotels.com

www.welcome-hotels.com

Set right on the banks of the river Regnitz, the hotel is only a few minutes walk from the historic town centre.

Accommodation

A restricted number of reduced-price rooms have been reserved for Forum guests at the conference hotel until 23 August. Please book your hotel room yourself using the keyword "LS-DYNA Forum" or book online at www.dynamore.de/forum2014-hotel-e.

Further hotels in walking distance to the Kongresshotel which you may chose for yourself: Hotel Tandem, Hotel SandStern, Palais Schrottenberg, Alt-Ringlein, Hotel am Dom, Hotel Brudermühle, Hotel Wohnbar

Participant fees

Industry: 580 Euro (510 Euro *)

Academic: 410 Euro (360 Euro *)

* Early bird until 8 August 2014

All prices per person plus VAT if applicable.

Fees include conference attendance, conference proceedings plus CD, gala dinner, lunches, coffee breaks, and attendance of the get together on 6 October 2014.

Hardware and software exhibition

Please request further information.

Conference language

German and English

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 postprocessor LS-PrePost and the optimization software LS-OPT as well as numerous finite element models needed for crash worthiness simulation.

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

Contact

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Fax +49 (0) 7 11 - 45 96 00 - 29

E-Mail: forum@dynamore.de

Registration

Please use the the registration form, send an E-Mail to forum@dynamore.de or register online at www.dynamore.de/forum2014-anm-e.

More information

www.dynamore.de/forum2014-e



Altes Rathaus Bamberg, Germany

DEVELOPER PRESENTATIONS

- 13:00 **Welcome**
K. Schweizerhof (DYNAmore)
- 13:15 **Recent Developments for Hot Stamping and Welding Processes in LS-DYNA**
T. Klöppel (DYNAmore)
- 13:45 **Current Status of Subcycling and Multiscale Simulations in LS-DYNA**
T. Borrvall (DYNAmore Nordic AB);
D. Bhalsod, J. O. Hallquist, B. Wainscott (LSTC)
- 14:15 **The Recent Update of LS-DYNA Meshfree and Advanced FEM for Manufacturing Application**
W. Hu, C.T. Wu, Y. Guo (LSTC)
- 14:45 **Paper Modeling in LS-DYNA**
J. Karlsson (DYNAmore Nordic AB)
- 15:15 Break

DEVELOPER PRESENTATIONS

- 16:00 **LS-OPT: New Developments and Outlook**
A. Basudhar, N. Stander (LSTC)
- 16:30 **Interesting Things I've been Working on**
B. Wainscott (LSTC)
- 17:00 **Numerical Investigation of Phase Change and Cavitation Effects**
Prof. M. Souli, N. Aquelet (LSTC/Universität Lille);
R. Messahel (Universität Lille); B. Cohen (EDF UTO)
- 17:30 **Updated Frequency Domain Analysis in LS-DYNA**
Y. Huang, Z. Cui (LSTC)
- 18:00 Beverages and snacks in the exhibition

WORKSHOP

Contacts in LS-DYNA
LS-DYNA offers extensive possibilities to model contact. While this generous selection guarantees extreme flexibility for the contact definition, it also requires a great deal of knowledge on the user's part.
The objective of this workshop is to provide the user with a summary of the possibilities and limits of the various contact formulations with focus on the selection of a suitable contact type.

WORKSHOP

Joining Techniques in LS-DYNA
This workshop offers insight into the modeling possibilities in LS-DYNA to the most frequently used connections, such as adhesive bonding, bolt fastening, welding, spot-weld adhesive bonding or riveting. Herein, the load carrying action of the individual connections as well as their structural stability will be discussed and the possible modeling approaches are demonstrated. Finally, the reliability of the obtained results are critically reviewed with particular emphasis on scenarios that include connection failure.

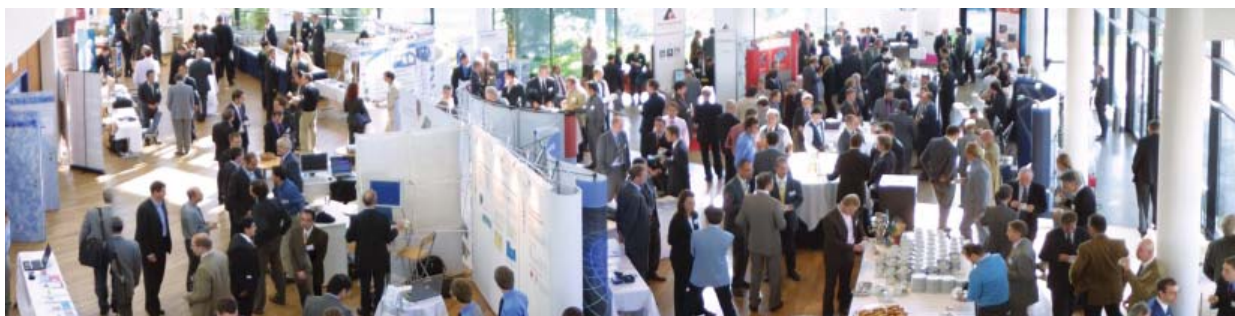
WORKSHOP

Material Failure of Metals
This workshop will discuss issues related to state-of-the-art material modeling under consideration of damage and failure using the material model GISSMO. Besides a discussion on the dependency of the deformation patterns on anisotropy and the tri-axial condition, the complex descriptions of failure are explained with respect to their dependency on the finite element size.

WORKSHOP

Modeling Plastics
The objective of this workshop is to give an overview of the available material models for foams, rubbers and glues in LS-DYNA and on how to apply them properly. Especially in rubber materials, the strain rate dependency as well as damage play an important role in the constitutive material formulation and thus, both have to be considered. Moreover, thermoplastics exhibit a complex mechanical behavior ranging from viscoelastic to viscoplastic, which can be clearly distinguished from the incompressible yield characteristics of metals.

HARDWAREN AND SOFTWARE EXHIBITORS



- | | | |
|--------------------------------------|-----------------------|--------------------------------------|
| 4a engineering | e-Xstream engineering | Kompetenzzentrum Virtuelles Fahrzeug |
| AIT Austrian Institute of Technology | Fujitsu | Lasso Ingenieurgesellschaft |
| Altair Engineering | GNS Systems | LSTC |
| Arup | GNS | MSC Software |
| Cray | IBM | NAFEMS |
| Detroit Engineered Products | Inprosim | NEC |
| DYNAmore | Intel | transtec |
| | | Ubeco |

July 2014

PLENARY

09:00 - 09:10

WELCOME / KEYNOTE PRESENTATIONS

Welcome

U. Franz (DYNAmore GmbH)

09:10 - 09:45

Recent Developments in LS-DYNA I

B. Wainscott (LSTC)

09:45 - 10:15

On two Recent Advances in Computational Mechanics: Isogeometric Analysis of Shells and Variational Mass Scaling

Prof. M. Bischoff (Universität Stuttgart)

10:15 - 10:50

Pause

10:50 - 11:00

Sponsorenvortrag: Fujitsu & Intel

E. Kehl (Fujitsu Technology Solutions GmbH); M. Widmer (Intel GmbH)

11:00 - 11:30

Aspekte der Insassensicherheit

C. Geisler, W. Bacher, M. Walz, T. Hofer (Daimler AG)

11:30 - 12:00

Challenges and Developments in Child Safety CAE

S. Vadlamudi (Adam Opel AG)

12:00 - 12:30

CAE from a Material Supplier's Point of View

A. Droste (DOW Automotive Systems)

12:30 - 13:50

Lunch break

PARALLEL

CRASH SIMULATION I – MATERIALS

13:50 - 14:10

Einfluss der Anisotropie auf die Bruchvorhersagefähigkeit von Aluminium Blechen

D. Riemensperger (Adam Opel AG); P. Du Bois (Consultant)

14:10 - 14:30

Calibration of Criteria in GISSMO for Metal Failure Prediction

K. Saito (JSOL Corporation); S. Chinzei, J. Naito (KOBE Steel, Ltd.)

14:30 - 14:50

The Simulation of Fracture Prediction by the Damage Model GISSMO in Various Materials of Sheet Metal

S. Chinzei, J. Naito (KOBE Steel, Ltd.); K. Saito (JSOL Corporation)

14:50 - 15:10

On the Prediction of Material Failure in LS-DYNA: A Comparison Between GISSMO and DIEM

F. Andrade, A. Haufe (DYNAmore GmbH); M. Feucht (Daimler AG)

15:10 - 15:40

Break

PARALLEL

CRASH SIMULATION II – MATERIALS / APPLICATIONS

15:40 - 16:00

Dynamisches Materialversagen

P. Du Bois (Consultant)

16:00 - 16:20

Modellierung von Felge und Reifen zur Abbildung der Radkinematik im Fahrzeugcrash

F. Burbulla (Prof. Dr. Ing. h.c. F. Porsche AG); S. Mattern, A. Lust (DYNAmore GmbH)

16:20 - 16:50

Crashsimulationen von Elektrofahrzeugen im Rahmen des EU-Projekts EVERS SAFE

Y. Léost (Fraunhofer-Institut EMI)

16:50 - 17:20

Pause

PARALLEL

CRASH III – EXPERIMENTS

17:20 - 17:40

Numerical Stress Wave Analysis in LS-DYNA and Force Measurement at Strain Rates up to 1000 /s of a High Speed Tensile Machine

J. Li, X. F. Fang (Universität Siegen)

17:40 - 18:00

Experimentelle und numerische Simulation der Einflüsse konstruktions- und fertigungsbedingter Toleranzen auf das Crashverhalten von Klebverbindungen

Prof. A. Matzenmiller, G. Schwarzkopf (Universität Kassel); Prof. G. Meschut, D. Teutenberg, M. Bobbert (Universität Paderborn)

18:00 - 18:20

Numerical and Experimental Investigating on Adhesive Joint Parts for Crash Condition

G. Kirov, F. Grabner, Z. Khalil (LKR Leichtmetallkompetenzzentrum Ranshofen GmbH); B. Fellner (Magna Steyr Engineering AG & Co KG); E. Mukeli (Magna Steyr Fahrzeugtechnik AG & Co KG)

19:00 - 20:00

GET TOGETHER IN THE EXHIBITON

from 20:00

GALA DINNER

PROCESS SIMULATION I – APPLICATIONS

Abkürzung von Umformprozessen durch Reduzierung von Beschnitt-Operationen in Verbindung mit hochgenauem Kalibrieren

D. Nierhoff, T. Flehmig, Prof. Kawalla (ThyssenKrupp Steel Europe AG)

DYNAFORM 5.9.2 – New Features and Future Development

J. Du Bois, A. Thang (Engineering Technologies Associates Inc.)

Determination of the Pressure Curve to Control Strain Paths in Tube Hydroforming by Applying Restart Analysis

T.-K. Nguyen, Prof. M. Liewald (Universität Stuttgart)

Simulation der wirkmedienbasierten Umformung ohne Formwerkzeug mit LS-DYNA

A. Metzger, D. C. Ruff, T. Ummenhofer (Karlsruher Institut für Technologie)

PROCESS SIMULATION II – ROLL FORMING / WELDING

Roll Forming Simulation with PROFIL and LS-DYNA

R. Brandegger (Ubeco GmbH); P. Vogel (DYNAmore GmbH)

Gekoppelte Simulation des Umformens und des Schweißens mit LS-DYNA zur Auslegung der Schweißverzugskompensation

T. Loose (Ingenieurbüro Tobias Loose)

Widerstandspunktschweißen mit LS-DYNA

I. Lepenies, K. Anakiev (DYNAmore GmbH); W. Perret (AUDI AG)

PROCESS SIMULATION III – THERMOMECHANICAL

Material Characterization and Modelling Methods for the Cryogenic Forming of Aluminium Alloys

G. Falkinger, F. Grabner, E. Kabliman, N. Sotirov (LKR Leichtmetallkompetenzzentrum Ranshofen GmbH); R. Schneider (Voestalpine Polynorm GmbH & Co. KG); M. Scheerer (AAC Aerospace & Advanced Composites GmbH)

Coupled Simulation of the Fluid Flow and Conjugate Heat Transfer in Press Hardening Processes

B. Boll, U. Göhner (DYNAmore GmbH); I. Caldichouri (LSTC); T. Wicke (Volkswagen AG)

3D Simulations of the Induction Surface Hardening Processes

M. Staudenmeyer, W. Rimkus, V. Knoblauch (Hochschule Aalen)



Courtesy of Daimler AG

CAE PROCESSES I

Automatic Model Reduction by Exploitation of Knowledge from Preexisting Simulations

D. Weigert, H. Schluder (AUDI AG);
Prof. F. Duddeck (TU München)

PARALLEL

13:50 - 14:10

Reduction in Simulation Time and Storage Requirements Using LoCo for SDM

M. Thiele (DYNAmore GmbH); S. Mertler (Sidact GmbH)

14:10 - 14:30

Reduced Modeling of Crash Barriers for Design Optimization of Space Frame Automobile Structures

M. Tischer, E. Wehrle, H. Baier (TU München)

14:30 - 14:50

Animator4, neue Trends im Postprozessing

C. Kaulich, S. Hanson (GNS mbH)

14:50 - 15:10

15:10 - 15:40

MATERIALS I – PLASTICS

Simulation von Klebstoffverbindungen

K. Plangger (Hexagon Technology Center GmbH/TU Dresden)

Implementierung eines Thermoviskoplastizitätsmodells mit Schädigung für die simultane Kalt-/Warmumformung

C. Bröcker, Prof. A. Matzenmiller, A. Szczepaniak (Universität Kassel)

Thermische Simulation der Aufheizung von Heckscheiben aus PMMA

A. Rühl, Prof. S. Kolling (Technische Hochschule Mittelhessen); V. Mende, B. Kiesewetter (Evonik Industries AG)

WORKSHOP

SCALE SDM products

Since many years, DYNAmore develops software solutions for simulation engineers to manage simulation data and simulation processes. These solutions were developed together with customers from the automotive industry and fundamentally support the simulation engineer in his daily work. This workshop will present software solutions for the different stages in the CAE process chain and their usage will be demonstrated live.

- LoCo: Data and process management for simulation data
- CAVIT: Postprocessing of simulation and experimental data
- Status.E: Monitoring of requirements and target achievement

PARALLEL

15:40 - 16:00

16:00 - 16:20

16:20 - 16:50

16:50 - 17:20

MATERIALS II – PLASTICS

Eine Methode zur Umrechnung experimentell ermittelter Fließkurven auf konstante Dehnraten als Input für Materialmodelle

T. Haase (Fraunhofer EMI)

Materialcharakterisierung und Modellierung von Elastomerwerkstoffen

N. Sygusch, Prof. S. Kolling (Technische Hochschule Mittelhessen); I. Staudt (Universität Luxemburg); J. Kuntsche, Prof. J. Schneider (TU Darmstadt)

Nonlinear Viscoelastic Modeling for Foams

V. Effinger, A. Haufe (DYNAmore GmbH); P. Du Bois (Consultant); M. Feucht (Daimler AG); Prof. M. Bischoff (Universität Stuttgart)

WORKSHOP

Dummy Positioning

Due to the growing amount of relevant legislation and consumer tests, the field of occupant safety in vehicle technology has become more important and also gained in complexity. Thus, sound knowledge on how to deal with the involved components dummy, seatbelt and seat is essential. Attendees of this workshop will learn about the composition of an LS-DYNA occupant safety simulation, including the positioning and fitting of a seatbelt to the dummy and the recommended contact definitions between the safety systems. Particular emphasis will be laid on modeling methods and the practical application of the respective features.

PARALLEL

17:20 - 17:40

17:40 - 18:00

18:00 - 18:20

PARALLEL	IT / HARDWARE	MATERIALS III – LONG FIBER REINFORCES PLASTICS
08:20 - 08:40	1000 Core Challenge U. Göhner (DYNAmore GmbH)	Kurz- und langfaserverstärkte Thermoplaste – Materialmodelle in LS-DYNA S. Hartmann, T. Erhart, A. Haufe (DYNAmore GmbH); P. Reithofer, B. Jilka (4a engineering GmbH)
08:40 - 09:00	HPC für den Mittelstand A. Wierse (Sicos)	Aligning the Element Orientation for Building up Simulation Models of Fiber Reinforced Structures Automatically A. Wunsch, A. Meyer, Prof. S. Vajna (Universität Magdeburg); R. Dienemann (Universität Wuppertal)
09:00 - 09:20	LS-DYNA Scalability: The Importance and Capability for Simulations Using Over 1000 Cores G. Clifford, T.-T. Zhu (Cray Inc.); J. Wang (LSTC)	Einsatz von LS-DYNA und modernster CT-Technologie für Geflechtstrukturen im textilen Leichtbau H. Finckh (Institut für Textil- und Verfahrenstechnik Denkendorf); C. Liebold (DYNAmore GmbH)
09:20 - 09:50	Break	
PARALLEL	PASSIVE SAFETY – PRE-/POSTPROCESSING	MATERIALS IV – SHORT FIBER REINFORCES PLASTICS
09:50 - 10:10	New Physics-Based Preprocessing Tools for LS-DYNA Safety Simulation Set-Up Y. Kolokythas, L. Rorris, T. Lioras (BETA CAE Systems SA)	Anisotropic Modeling of Short Fibers Reinforced Thermoplastics Materials with LS-DYNA A. Hatt (Faurecia Seating Product Group)
10:10 - 10:30	Simulation-Based Airbag Folding System JFOLD Version 2 – New Capabilities and Folding Examples S. Hayashi (JSOL Corporation); R. Taylor (Ove Arup & Partners International Limited)	Kurzfaserverstärkte spritzgegossene Kunststoffbauteile einfach werkstoffgerecht simulieren W. Korte, M. Stojek, S. Pazour (PART Engineering GmbH)
10:30 - 10:50	Automated Extraction of Occupant Injury Results N. Tzolas (BETA CAE Systems SA)	Experimentelle und numerische Untersuchung eines kurzglasfaserverstärkten Kunststoffes R. Jennrich, M. Roth, Prof. S. Kolling (Technische Hochschule Mittelhessen); C. Liebold (DYNAmore GmbH); G. Weber (Celanese GmbH)
10:50 - 11:20	Break	
PARALLEL	HUMAN MODELS – SAFETY / COMFORT	MATERIALS V – METALS
11:20 - 11:40	Influence of Ribcage Shape on Response of Anthropometrically Correct 5th Percentile Female Thorax P. Ghosh (Mercedes Benz R&D India); C. Mayer (Daimler AG)	Modellierung des Einflusses der Porenmorphologie auf das Versagenverhalten eines Aluminiumgusswerkstoffs D.-Z. Sun, Y. Ma, F. Andrieux (Fraunhofer IWM)
11:40 - 12:00	Activities Using the THUMS Human Models for Crash and Safety Applications D. Fressmann (DYNAmore GmbH)	Material Modeling of TWIP-Steels: Applications to Sheet Metal Forming Simulations A. Butz, M. Zapara, D. Helm (Fraunhofer IWM); A. Erhart, A. Haufe (DYNAmore GmbH); D. Croizet, M. Biasutti (ESI Group); N. Stenberg, M. Schneider (Swerla Kimab AB); M. Schneider (Salzgitter Mannesmann Forschungs GmbH); M. Kampczyk (Faurecia Autositze GmbH)
12:00 - 12:20	Simulation-Assisted Prosthetic Design E. Ramasamy, B. Dorow, U. Schneider (Fraunhofer IPA); Prof. O. Röhrle (Fraunhofer IPA/Universität Stuttgart)	The Effect of Full 3-d Stress States on the Prediction of Damage and Failure in Sheet Metal Forming Simulation A. Erhart, A. Haufe (DYNAmore GmbH)
12:20 - 13:40	Lunch break	
PARALLEL	PEDESTRIAN SAFETY / DUMMIES	MATERIALS VI – FAILURE PLASTICS
13:40 - 14:00	Modellierung und Validierung des Kopfaufpralls auf Windschutzscheiben C. Alter, Prof. S. Kolling (Technische Hochschule Mittelhessen); Prof. J. Schneider (TU Darmstadt)	Versagen von Thermoplasten: Teil 1 – Charakterisierung, Versuche M. Rollant, A. Fertschej, P. Reithofer (4a engineering GmbH)
14:00 - 14:20	Auswirkungen des nicht-lokalen Versagenkriteriums auf das Beschleunigungsverhalten von Kopfpiktoren beim Anprall im mittleren Windschutzscheibenbereich F. Nuß, A. Herkenhoff, Prof. L. Eckstein (RWTH Aachen)	Versagen von Thermoplasten: Teil 2 – Materialmodellierung und Simulation A. Fertschej, M. Rollant, P. Reithofer (4a engineering GmbH)
14:20 - 14:40	Latest Developments of LS-DYNA Test Dummy Models K. Koschdon (Humanetics Europe GmbH)	Modellierung des Versagens von unverstärkten und kurzfaserverstärkten Polymerwerkstoffen H. Dell, G. Oberhofer (Matfem Partnerschaft Dr. Gese & Oberhofer); V. Yelissejev (Matfem Voronezh)
14:40 - 15:00	Update in Dummy Model Enhancements and Effective Preprocessing S. Stahlschmidt, A. Gromer, R. D'Souza, U. Franz (DYNAmore GmbH)	Accurate Prediction of the Failure of Continuous and Short Fiber Composite Components in Automotive and Aerospace Fields J. Kapfhammer, S. Calmels, B. Bidaine, B. Alsteens, R. Assager (e-Xstream engineering/MSC Software)
15:00 - 15:30	Break	
PLENARY	KEYNOTE PRESENTATION	
15:30 - 15:55	Recent Developments in LS-DYNA II B. Wainscott (LSTC)	
15:55 - 16:00	Farewell Prof. K. Schweizerhof (DYNAmore GmbH / KIT)	

SIMULATION METHODS I

Untersuchung des Spannungs- und Verschiebungsverhaltens verschiedener LS-DYNA-Elementtypen in Kombination mit verschiedenen Anti-Hourglassing-Formulierungen und initialen Elementdeformierungen

B. Kästner, M. Kober, Prof. A. Kühhorn (TU Cottbus);
A. Keskin (Rolls-Royce Deutschland Ltd. & Co KG)

Methode zur FE-Simulation von Mode III-Risswachstum mit LS-DYNA

J. Hartmann, K. Kunter, T. Heubrandtner (Kompetenzzentrum - Das virtuelle Fahrzeug Forschungsgesellschaft mbH); B. Fellner (Magna Steyr Engineering AG & Co KG); J. Martinez (AUDI AG)

Combinations of Meshes and Elements that Seems Able to Predict the Correct Deformation Mode

Prof. T. Tryland (Raufoss/Universität Trondheim)

SIMULATION METHODS II

Praxisrelevanter Vergleich zwischen der Finite-Elemente-Theorie und den netzfreien Berechnungsmethoden bei der Analyse von Zerspannungssimulationen

H. Vazquez Martinez (Fraunhofer IPA)

Identifikation mechanischer Steifigkeitsparameter eines vereinfachten Triebwerksaufhängungssystems mit Hilfe eines verfeinerten Aufhängungsmodells

M. Kober, Prof. A. Kühhorn, E. Stellinger (TU Cottbus);
A. Keskin (Rolls-Royce Deutschland Ltd. & Co KG)

Modellierung und Simulation eines gefüllten Elastomerdämpfers mit LS-DYNA

K. Swidergal, P. Thumann, M. Wagner (OTH Regensburg);
C. Lubeseder, I. von Wurmb, J. Meinhardt (BMW AG);
Prof. S. Marburg (Universität der Bundeswehr)

SIMULATION METHODS III

Blind Blast Simulation a Validation Effort Assessment

L. Schwer (Schwer Engineering & Consulting Services)

Charakterisierung von Aluminium mittels Split-Hopkinson-Pressure-Bar zur Berechnung von Beschussvorgängen

M. Roth, S. Walter, Prof. S. Kolling, Prof. K. Stiebler
(Technische Hochschule Mittelhessen)

Particle Methods in LS-DYNA

N. Karajan (DYNAmore);
J. Wang, Z. Han, H. Teng, C.T. Wu, W. Hu, Y. Guo (LSTC)

OPTIMIZATION

Design Tolerance Optimization Using LS-OPT

A. Basudhar, N. Stander (LSTC);
A. Svedin (DYNAmore Nordic AB)

Optimierung eines Transport-Schutzkoffers optischer Messgeräte mittels numerischer Simulation

T. Maul (Leica Geosystems AG);
K. Plangger (Hexagon Technology Center GmbH)

CAE Driven Multi Disciplinary Optimization of Vehicle Systems

P. Naidu (Detroit Engineered Products)

Optimierung von Materialparametern durch automatisierten Abgleich von Versuch und Simulation

C. Schwarz, P. Pfeufer (ISKO engineers AG)

WORKSHOP

Best Practice in Crash Analysis

The workshop aims at simulation engineers, who already have practical experience in the application of LS-DYNA. Attendees will be shown, how LS-DYNA is used for crash analysis in the automotive industry and how certain simplifications become reasonable. Explanations of the most frequently used modeling techniques as well as the respective settings in LS-DYNA for a robust and numerically scalable simulation complete the workshop.

LS-OPT Material Parameters

The use of new materials, such as plastics, composites, foams, fabrics or high-tensile steels, demands the application of highly complex material models. These material formulations are generally associated with numerous material parameters. In this workshop, a brief introduction in LS-OPT is given with a focus on the application of LS-OPT to determine material parameters. Herein, an automatic comparison is carried out between the experimental results and the simulation results of LS-DYNA.

WORKSHOP

LS-DYNA Tools

In this workshop we will present 13 tools that are supposed to help you working with LS-DYNA. Amongst others, this includes the software „plotcprs“ and „check-c“ which allow to compress d3plot-files and to identify critical warnings of contact definitions, respectively. All tools are available for the operating systems Windows and Linux and are free of charge thanks to the kind support of the Daimler AG, the Dr. Ing. h.c. Porsche AG and the Adam Opel AG.

WORKSHOP

LS-DYNA Implicit

In recent years, the simulation possibilities in LS-DYNA using an implicit time integration scheme have been enhanced extensively. The aim of this workshop is to give participants an overview of the possibilities and limits of implicit simulations using LS-DYNA. In particular, attention will be drawn on the required input cards that are needed for linear and nonlinear static simulations as well as long-duration transient simulations.

PARALLEL

08:20 - 08:40

08:40 - 09:00

09:00 - 09:20

09:20 - 09:50

PARALLEL

09:50 - 10:10

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PARALLEL

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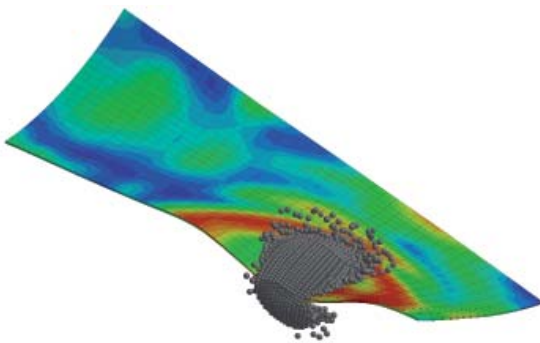
14:40 - 15:00



Meshless Methods in LS-DYNA - SPH

Attendees of this seminar will be introduced to the theoretical basics of the meshless method "Smoothed Particle Hydrodynamics" (SPH) and receive guidance for its practical application in LS-DYNA. The seminar will thoroughly illustrate the necessary configurations in the LS-DYNA input deck to realize a successful nonlinear SPH simulation and will furthermore clarify the differences to conventional FEM.

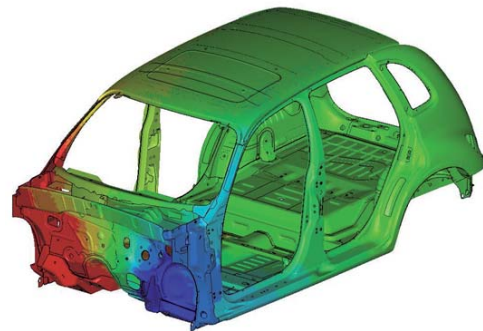
Date: 1 - 2 October
 Language: English
 Lecturer: Prof. M. Souli (Univ. Lille/LSTC)
 Course fee: 1.000 Euro for conference participants
 – else 1.100 Euro / participant



NVH & Frequency Domain Analysis

The objective of the training course is to introduce the frequency domain vibration and acoustic features of LS-DYNA to users, and give a detailed look at the application of these features in vehicle NVH simulation. This course is recommended for engineers who want to run NVH or other frequency domain vibration and acoustic simulation problems with LS-DYNA. This course is useful for engineers and researchers who are working in the area of vehicle NVH, aircraft/spacecraft vibro-acoustics, engine noise simulation, machine vibration testing and simulation, etc.

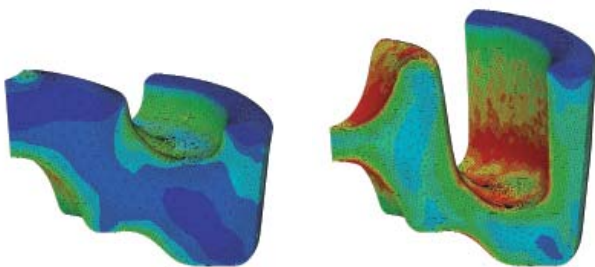
Date: 1 - 2 October
 Language: English
 Lecturer: Y. Huang (LSTC)
 Course fee: 1.000 Euro for conference participants
 – else 1.100 Euro / participant



Meshless Methods in LS-DYNA - EFG

Attendees of this seminar will be introduced to the application of the meshless method "Element-Free Galerkin" (EFG) in LS-DYNA. The seminar will outline the theoretical foundations and thoroughly refer to the settings required in the LS-DYNA input deck to carry out a successful nonlinear EFG simulation. Herein, the difference between the conventional EFG formulation and the adaptive or discontinuous formulations will be explained.

Date: 9 - 10 October
 Language: English
 Lecturer: W. Hu (LSTC)
 Course fee: 1.000 Euro for conference participants
 – else 1.100 Euro / participant



ALE and Fluid-Structure Interaction

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.

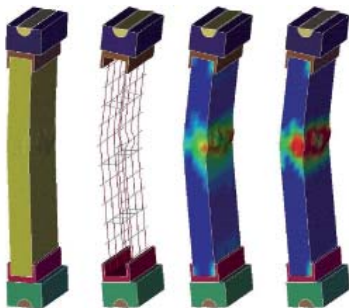
Date: 9 - 10 October
 Language: English
 Lecturer: Prof. M. Souli (Univ. Lille/LSTC)
 Course fee: 1.000 Euro for conference participants
 – else 1.100 Euro / participant



Concrete and Geomaterial Modeling

The course starts from the common ground of introductory metal plasticity constitutive modeling and successively builds on this base adding the constitutive modeling features necessary to model concrete and geomaterials. The LS-DYNA constitutive models covered are adequate for modeling most types of rock, all concretes, and a large class of soils. The course is intended for those new to concrete & geomaterial constitutive modeling, but will also be useful to those seeking a more in-depth explanation of the LS-DYNA concrete and geomaterial constitutive models covered.

Date: 9 - 10 October
 Language: English
 Lecturer: L. Schwer (Consultant)
 Course fee: 1.000 Euro for conference participants
 – else 1.100 Euro / participant



Blast Modeling with LS-DYNA

Blast events form a class of simulation environments well suited to the solution capabilities of LS-DYNA. LS-DYNA is unique in offering the analyst the choice of Lagrangean, Eulerian (ALE) and simple engineering solvers, and combinations of these, for simulating high energy events such as blast loading. The course provides an insight into features of LS-DYNA to model air blast and blast in solid materials.

Date: 13 - 14 October
 Language: English
 Lecturer: L. Schwer (Schwer Engineering)
 P. Du Bois (Consultant)
 Course fee: 1.000 Euro for conference participants
 – else 1.100 Euro / participant

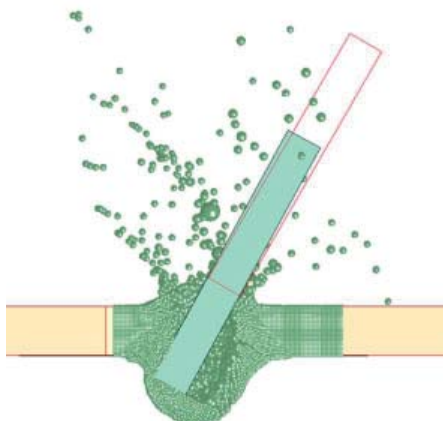


Mach Stem Formation
 Courtesy of Schwer Engineering & Consulting Services

Penetration Modeling with LS-DYNA

Penetration events form a class of simulation environments well suited to the solution capabilities of LS-DYNA. LS-DYNA is unique in offering the analyst the choice of Lagrange, Eulerian (ALE) and meshfree methods, and combinations of these methods, for simulating high energy events such as penetration and perforation. In addition to high energy, these events are typically associated with large deformations, damage, and failure both on the material and structural level.

Date: 15 - 16 October
 Language: English
 Lecturer: L. Schwer (Schwer Engineering)
 P. Du Bois (Consultant)
 Course fee: 1.000 Euro for conference participants
 – else 1.100 Euro / participant



Explosives Modeling for Engineers

This class focuses on the application of LS-DYNA to modeling explosives. LS-DYNA simulations involving explosives can be modeled on several engineering levels from simple application of equivalent pressure histories via *LOAD_BLAST_ENHANCED, explicit inclusion of explosive charges using equations-of-state and detonation via *INITIAL_DETONATION, and detonation of explosive due to impact using *EOS_IGNITION_AND_GROWTH_OF_REACTION_IN_HE.

Date: 17 October
 Language: English
 Lecturer: L. Schwer (Schwer Engineering)
 P. Du Bois (Consultant)
 Course fee: 500 Euro for conference participants
 – else 550 Euro / participant

More information and online registration
www.dynamore.de/seminars

All prices plus VAT if applicable.
 All Seminars will be held at the DYNAMore in Stuttgart.



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