LSTC
Livermore Software
Technology Corp.

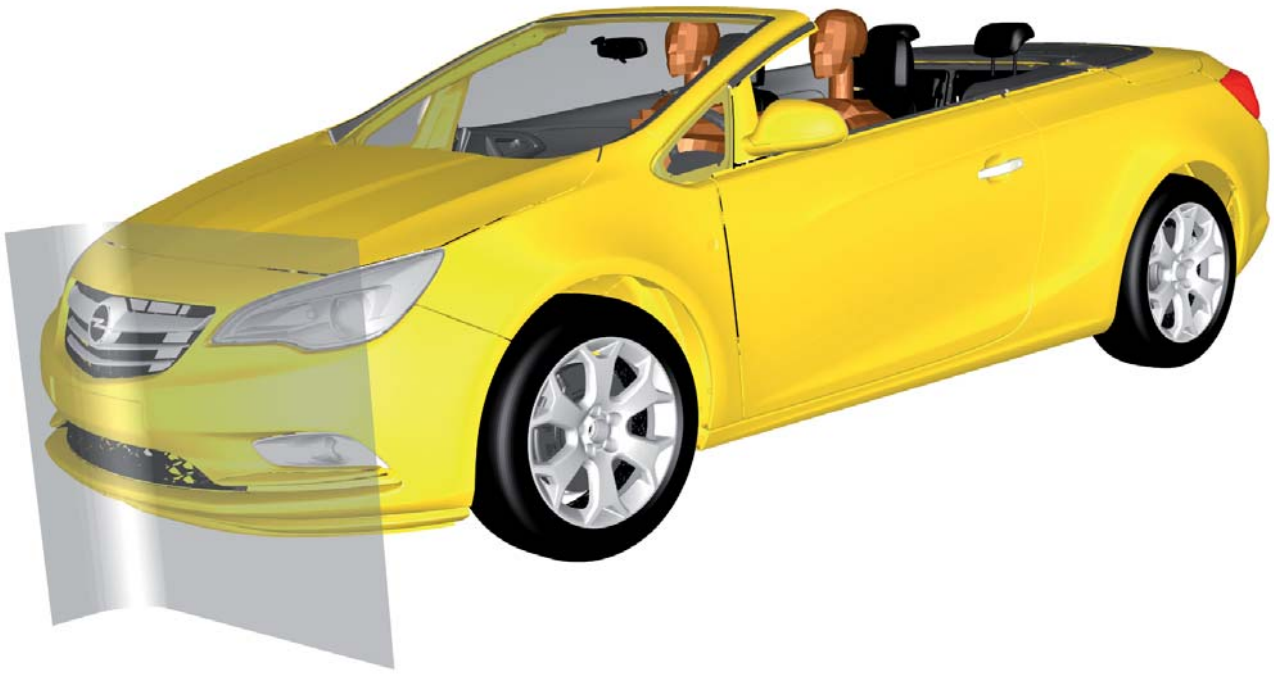
DYNA
MORE

UPDATE

INVITATION – AGENDA

13th LS-DYNA FORUM 2014

6 - 8 OCTOBER 2014, BAMBERG, GERMANY



Courtesy of Adam Opel AG

PREMIUM SPONSORS

intel FUJITSU

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

DYNAmore

SPONSORS

Premium

Gold

Silver

Monday, 6 October

	from 11:00		Registration		
Exhibition	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

	from 08:00		Registration			
Exhibition	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	Exhibition	Get together			
	20:00	Hegelsaal	Gala dinner			

Wednesday, 8 October

Exhibition	08:20 - 09:20	Parallel sessions	IT / Hardware	Materials III (Plastics FRP)	Methods I	Workshop: Crash/DYNAtools
	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: Implicit
	12:20 - 13:30	Lunch break				
	13:30 - 14:50	Parallel sessions	Pedestrian Safety Dummies	Materials VI (Failure)	Optimization	Processes IV (Materials)
	15:20 - 16:15	Plenary	Keynote presentations			

Welcome Kongresshotel Bamberg, Germany

Venue

Welcome Kongresshotel Bamberg
Mußstraße 7
D-96047 Bamberg, Germany
Tel. +49 (0) 9 51 - 70 00 - 0
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

Please book your hotel room yourself at the Welcome Kongresshotel Bamberg.
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

Altes Rathaus Bamberg, Germany

Participant fees

Industry: 580 Euro
Academic: 410 Euro
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

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

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 **Interesting Things I've been Working on**
B. Wainscott (LSTC)

16:30 **Updated Frequency Domain Analysis in LS-DYNA**
Y. Huang, Z. Cui (LSTC)

17:00 **Numerical Investigation of Phase Change and Cavitation Effects**
Prof. M. Souli, N. Aquelet (LSTC/Université Lille);
R. Messahel (Université Lille); B. Cohen (EDF UTO)

17:30 **Miscellaneous Developments and Bugfixes in LS-DYNA**
T. Erhart, S. Hartmann (DYNAmore)

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.

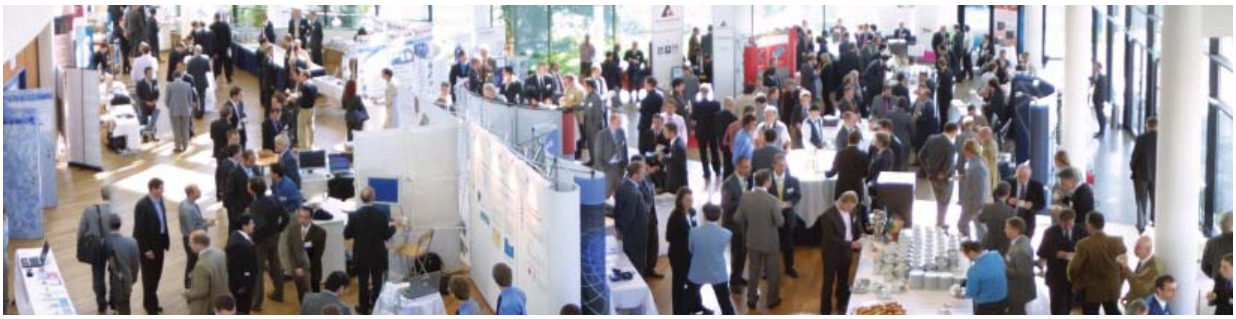
WORKSHOP

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
AIT Austrian Institute of Technology
Altair Engineering
Cray
Detroit Engineered Products
DYNAmore
e-Xstream engineering
Fujitsu
GNS Systems
GNS
Hitachi High-Technologies Europe
IBM
Inprosim
Intel
Kompetenzzentrum Virtuelles Fahrzeug
Lasso Ingenieurgesellschaft
LSTC
MSC Software
Nafems
NEC
transtec
Ubeco

Stand: Sept. 2014

AGENDA USER FORUM – TUESDAY, 7 OCTOBER 2014

PLENARY — **WELCOME / KEYNOTE PRESENTATIONS**

09:00 - 09:10	**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	**Occupant Simulation for the Mercedes-Benz S-Class** 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	PROCESS SIMULATION I – APPLICATIONS
13:50 - 14:10	**Einfluss der Anisotropie auf die Bruchvorhersagefähigkeit von Aluminium Blechen** D. Riemensperger (Adam Opel AG); P. Du Bois (Consultant)	**Abkürzung von Umformprozessen durch Reduzierung von Beschnitt-Operationen in Verbindung mit hochgenauem Kalibrieren** D. Nierhoff, T. Flehmig, Prof. Kawalla (ThyssenKrupp Steel Europe AG)
14:10 - 14:30	**Calibration of Criteria in GISSMO for Metal Failure Prediction** K. Saito (JSOL Corporation); S. Chinzei, J. Naito (KOBE Steel, Ltd.)	**DYNAFORM 5.9.2 – New Features and Future Development** J. Du Bois, A. Thang (Engineering Technologies Associates Inc.)
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)	**Determination of the Pressure Curve to Control Strain Paths in Tube Hydroforming by Applying Restart Analysis** T.-K. Nguyen, Prof. M. Liewald (Universität Stuttgart)
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)	**Simulation der wirkmedienbasierten Umformung ohne Formwerkzeug mit LS-DYNA** A. Metzger, D. C. Ruff, T. Ummenhofer (Karlsruher Institut für Technologie)
15:10 - 15:40	Break	

PARALLEL	CRASH SIMULATION II – MATERIALS / APPLICATIONS	PROCESS SIMULATION II – ROLL FORMING / WELDING
15:40 - 16:00	**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)	**Roll Forming Simulation with PROFIL and LS-DYNA** R. Brandegger (Ubeco GmbH); P. Vogel (DYNAmore GmbH)
16:00 - 16:20	**Crashsimulationen von Elektrofahrzeugen im Rahmen des EU-Projekts EVERSAFE** Y. Léost (Fraunhofer-Institut EMI)	**Gekoppelte Simulation des Umformens und des Schweißens mit LS-DYNA zur Auslegung der Schweißverzugskompensation** T. Loose (Ingenieurbüro Tobias Loose)
16:20 - 16:50	**Dynamisches Materialversagen** P. Du Bois (Consultant)	**Widerstandspunktschweißen mit LS-DYNA** I. Lepenies, K. Anakiev (DYNAmore GmbH); W. Perret (AUDI AG)
16:50 - 17:20	Pause	

PARALLEL	CRASH III – EXPERIMENTS	PROCESS SIMULATION III – THERMOMECHANICAL
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, Prof. X. F. Fang (Universität Siegen)	**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)
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)	**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)
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)	**3D Simulations of the Induction Surface Hardening Processes** M. Staudenmeyer, W. Rimkus, V. Knoblauch (Hochschule Aalen)
19:00 - 20:00	**GET TOGETHER IN THE EXHIBITON**	
from 20:00	**GALA DINNER**	

Courtesy of Daimler AG

CAE PROCESSES I

PARALLEL

Automatic Model Reduction by Exploitation of Knowledge from Preexisting Simulations 13:50 - 14:10
D. Weigert, H. Schluder (AUDI AG);
Prof. F. Duddeck (TU München)

Reduction in Simulation Time and Storage Requirements Using LoCo for SDM 14:10 - 14:30
M. Thiele (DYNAmore GmbH); S. Mertler (Sidact GmbH)

Reduced Modeling of Crash Barriers for Design Optimization of Space Frame Automobile Structures 14:30 - 14:50
M. Tischer, E. Wehrle, H. Baier (TU München)

Animator4, neue Trends im Postprozessing 14:50 - 15:10
C. Kaulich, S. Hanson (GNS mbH)

15:10 - 15:40

MATERIALS I – PLASTICS

WORKSHOP

PARALLEL

Industrielle Umformsimulation von Gelege-Mehrschichtverbunden 15:40 - 16:00
S. Kreissl (BMW AG)

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

Simulation von Klebstoffverbindungen 16:00 - 16:20
K. Plangger (Hexagon Technology Center GmbH/TU Dresden)

Thermische Simulation der Aufheizung von Heckscheiben aus PMMA 16:20 - 16:50
A. Rühl, Prof. S. Kolling (Technische Hochschule Mittelhessen);
V. Mende, B. Kiesewetter (Evonik Industries AG)

16:50 - 17:20

MATERIALS II – PLASTICS

WORKSHOP

PARALLEL

Eine Methode zur Umrechnung experimentell ermittelter Fließkurven auf konstante Dehnraten als Input für Materialmodelle 17:20 - 17:40
T. Haase (Fraunhofer EMI)

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.

Materialcharakterisierung und Modellierung von Elastomerwerkstoffen 17:40 - 18:00
N. Sygusch, Prof. S. Kolling (Technische Hochschule Mittelhessen);
I. Staudt (Universität Luxemburg); J. Kuntsche, Prof. J. Schneider (TU Darmstadt)

Nonlinear Viscoelastic Modeling for Foams 18:00 - 18:20
V. Effinger, A. Haufe (DYNAmore GmbH); P. Du Bois (Consultant);
M. Feucht (Daimler AG); Prof. M. Bischoff (Universität Stuttgart)

Program subject to alterations.

AGENDA USER FORUM – WEDNESDAY, 8 OCTOBER 2014

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. Wünsch, 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 Versagensverhalten 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 (Frauenhofer IWM); A. Erhart, A. Haufe (DYNAmore GmbH); D. Croizet, M. Biasutti (ESI Group); N. Stenberg, M. Schneider (Swera 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 - 13:30	Lunch break	
PARALLEL	**PEDESTRIAN SAFETY / DUMMIES**	**MATERIALS VI – FAILURE PLASTICS**
13:30 - 13:50	**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)
13:50 - 14:10	**Auswirkungen des nicht-lokalen Versagenskriteriums auf das Beschleunigungsverhalten von Kopfimpaktoren 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)
14:10 - 14:30	**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. Yelisseyev (Mattest Voronezh)
14:30 - 14:50	**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. Kapfhamer, S. Calmels, B. Bidaine, B. Alsteens, R. Assaker (e-Xstream engineering/MSC Software)
14:50 - 15:20	Break	
PLENARY	**KEYNOTE PRESENTATION**	
15:20 - 15:45	**LS-OPT: New Developments and Outlook** A. Basudhar, N. Stander (LSTC)	
15:45 - 16:10	**Recent Developments in LS-DYNA II** B. Wainscott (LSTC)	
16:10 - 16:15	**Verabschiedung** T. Münz (DYNAmore)	

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)

WORKSHOP

PARALLEL

Best Practice in Crash Analysis and LS-DYNA Tools 08:20 - 08:40
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. Additionally 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. 08:40 - 09:00

09:00 - 09:20

09:20 - 09:50

SIMULATION METHODS II

Praxisrelevanter Vergleich zwischen der Finite-Elemente-Theorie und den netzfreien Berechnungsmethoden bei der Analyse von Zerspanungssimulationen
H. Vazquez Martinez (Fraunhofer IPA)

Identifikation mechanischer Steifigkeitsparameter eines vereinfachten Triebwerksaufhängungssystems mit Hilfe eines verfeinerten Aufhängungsmodells
M. Kober, Prof. A. Kühhorn, E. Stelldinger (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)

WORKSHOP

PARALLEL

LS-OPT Material Parameters 09:50 - 10:10
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. 10:10 - 10:30

10:30 - 10:50

10:50 - 11:20

SIMULATION METHODS III

Blind Blast Simulationa 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)

WORKSHOP

PARALLEL

LS-DYNA Implicit 11:20 - 11:40
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. 11:40 - 12:00

12:00 - 12:20

12:20 - 13:30

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
N. Nair (Detroit Engineered Products)

Optimierung von Materialparametern durch automatisierten Abgleich von Versuch und Simulation
C. Schwarz, P. Pfeufer (ISKO engineers AG)

PROCESS SIMULATION IV – MATERIALS

PARALLEL

Implementierung eines Thermoviskoplastizitätsmodells mit Schädigung für die simultane Kalt-/Warmumformung 13:30 - 13:50
C. Bröcker, A. Matzenmiller, A. Szczepaniak (Universität Kassel)

Improved Rule of Mixture for Determination of Mechanical Properties of Dual Phase Steel with Different Martensite Fraction 13:50 - 14:10
M. Hofmann, T. Wallmersperger, M. Hunkel (TU Dresden)

Modellierungsansätze und Simulationsmethoden zur Berücksichtigung dynamischer Maschineneigenschaften bei der Blechumformsimulation 14:10 - 14:30
Prof. K. Großmann, L. Penter, C. Schenke (TU Dresden)

Development of a Unit Cell Model for Structural Metal Sheets using *CONSTRAINED_MULTIPLE_GLOBAL 14:30 - 14:50
M. Hartmann, S. Jäger, M. Roschitz, A. Horr (AIT Austrian Institute of Technology, LKR Leichtmetallkompetenzzentrum Ranshofen GmbH)

14:50 - 15:20

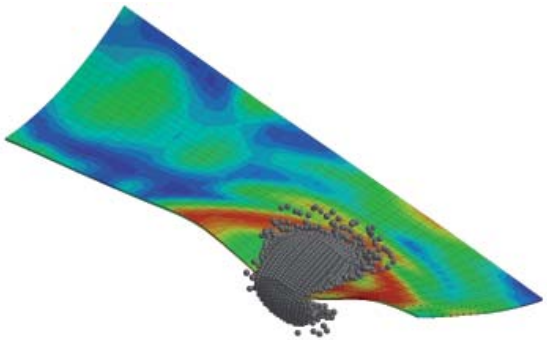
Courtesy of Dr. Ing. h.c. F. Porsche AG

Program subject to alterations.

Meshless Methods in LS-DYNA - SPH

Attendees of this training course 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.

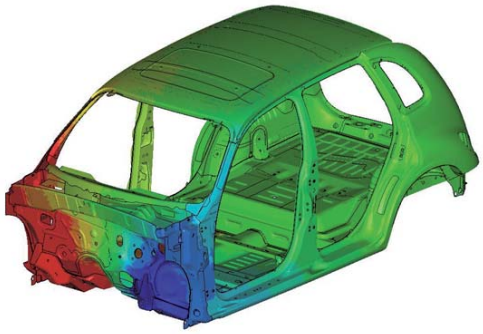
Date: 1 - 2 October
Language: English
Lecturer: Prof. M. Souli (Univ. Lille/LSTC)
Course fee: 1.000 Euro for conference participants – else 1.100 Euro / participant



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.

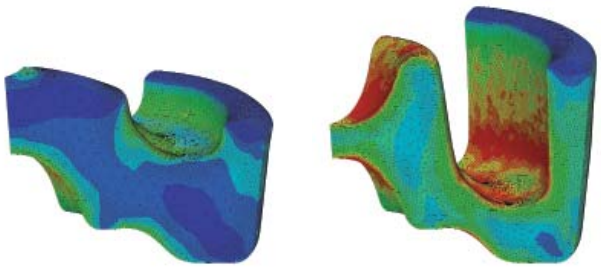
Date: 1 - 2 October
Language: English
Lecturer: Y. Huang (LSTC)
Course fee: 1.000 Euro for conference participants – else 1.100 Euro / participant



Meshfree EFG, SPG and Advanced FEM

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

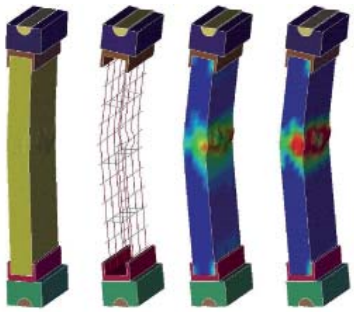
In this seminar, you receive comprehensive information about the latest developments in LS-DYNA to analyze fluids and, in particular, the fluid-structure interaction using its Arbitrary Lagrangean Eulerian (ALE) capabilities. Attendees will learn about the theoretical background how fluids are implemented 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.

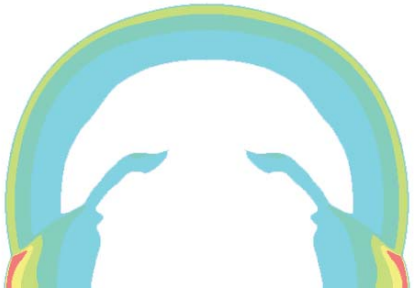
Date: 9 - 10 October
Language: English
Lecturer: L. Schwer (Consultant)
Course fee: 1.000 Euro for conference participants – else 1.100 Euro / participant



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

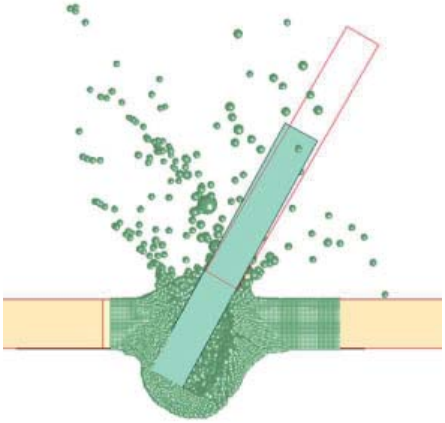


Mach Stem Formation
Courtesy of Schwer Engineering & Consulting Services

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.

DYNAmore Gesellschaft für FEM Ingenieurdienstleistungen mbH

Headquarters
DYNAmore GmbH
Industriestr. 2
70565 Stuttgart, Germany
Tel.: +49 (0)711 - 45 96 00 - 0
Fax: +49 (0)711 - 45 96 00 - 29
E-Mail: info@dynamore.de
www.dynamore.de

Office Ingolstadt
DYNAmore GmbH
Donaustr. 7
85049 Ingolstadt, Germany
Tel.: +49 (0)841 - 12 60 48 - 34
Fax: +49 (0)841 - 12 60 48 - 38

Office Dresden
DYNAmore GmbH
Pohlandstraße 19
01309 Dresden, Germany
Tel.: +49 (0)351 - 31 20 02 - 0
Fax: +49 (0)351 - 31 20 02 - 29

Office North
DYNAmore GmbH
Im Balken 1
29364 Langlingen, Germany
Tel.: +49 (0)50 82 - 9 14 00 - 51
Fax: +49 (0)50 82 - 9 14 00 - 49

Office Berlin
DYNAmore GmbH
Stralauer Platz 34
10243 Berlin, Germany
Tel.: +49 (0)30 - 20 68 79 10
Fax: +49 (0)30 - 20 07 83 82

Subsidiary Companies

DYNAmore Nordic AB
Brigadgatan 14
587 58 Linköping, Sweden
Tel.: +46 (0)13 - 23 66 80
Fax: +46 (0)13 - 21 41 04
E-Mail: info@dynamore.se
www.dynamore.se

DYNAmore Swiss GmbH
Technoparkstrasse 1
8005 Zurich, Switzerland
Tel.: +41 (0)44 - 6 33 61 62
Fax: +41 (0)44 - 6 33 13 94
E-Mail: info@dynamore.ch
www.dynamore.ch

DYNAmore Italia S.r.l.
Piazza Castello, 139
10122 Torino, Italy
Tel.: +39 335 - 1 57 05 24
E-Mail: info@dynamore.it
www.dynamore.it

Office Göteborg
DYNAmore Nordic AB
Lindholmspiren 3
417 56 Göteborg, Sweden
Tel.: +46 (0)31 - 3 01 23 80

FSC

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