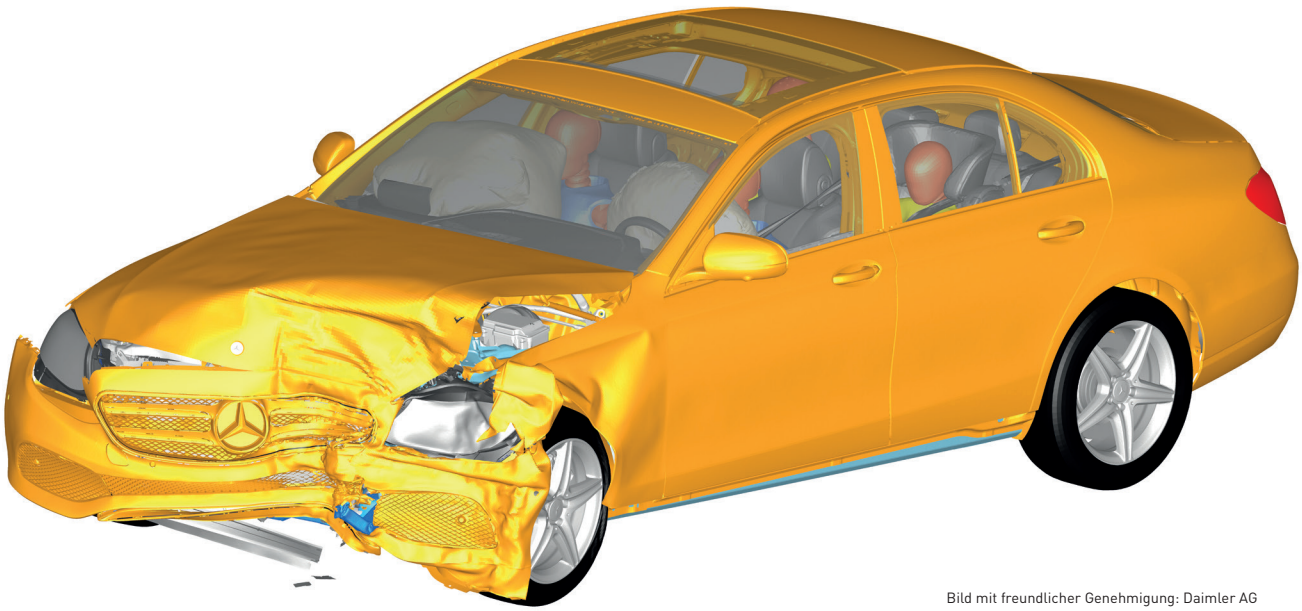
LSTC Livermore Software Technology Corp.

DYNA MORE

Vortragsprogramm

15. DEUTSCHES LS-DYNA FORUM

15. - 17. Oktober 2018, Bamberg



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Liebe LS-DYNA Anwenderinnen und Anwender,

wir freuen uns sehr, Sie beim LS-DYNA Forum 2018 begrüßen zu dürfen und heißen Sie herzlich willkommen in Bamberg.

Die Veranstaltung ist über die letzten Jahre kontinuierlich gewachsen und mittlerweile sind es über 100 Fachvorträge in fünf parallelen Sessions, die Sie in den nächsten zweieinhalb Tagen erwarten. Für den Einsatz und das Engagement der Vortragenden möchten wir uns an dieser Stelle recht herzlich bedanken.

Neben den Vorträgen stehen auch wieder die beliebten Workshops auf dem Programm. Hier haben Sie die Möglichkeit, sich intensiv mit einem Thema zu beschäftigen und gemeinsam mit anderen Anwendern Fragestellungen und Lösungsansätze zu diskutieren.

Welcome Kongresshotel Bamberg

In der begleitenden Hard-und Softwareausstellung können Sie sich wie immer über aktuelle Entwicklungen aus dem LS-DYNA Umfeld informieren, bestehende Kontakte pflegen und neue Kontakte knüpfen.

Wir wünschen Ihnen einen angenehmen Aufenthalt beim LS-DYNA Forum 2018.

Ihr DYNAmore Team

LSTC Livermore Software Technology Corp.

DYNA MORE

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LASSO Ingenieurgesellschaft mbH

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Montag, 15. Oktober

	09:00 - 12:00 Uhr	Diskussion	Organisiert vom asc(s: Multi-Level-Optimization with FE-Substructures using LS-DYNA (Raum K13)				
	ab 11:00 Uhr	Hotelfoyer	Registration				
			Plenum – Hegelsaal				
Ausstellung	13:00 - 15:10 Uhr	Plenum	Keynote Presentations *				
			Raum 1	Raum 2	Raum 3	Raum 4	Raum 5
	15:40 - 16:40 Uhr	Parallel	Crash Model Building	Occupant Safety I	Process - Metal Forming I	Civil Engineering	Workshop: Welding
	17:10 - 18:30 Uhr	Parallel	Crash - Light-weight Composites	Occupant Safety II	Process - Metal Forming II	Simulation Data Management I	Workshop: Material
	ab 19:15 Uhr	Ausstellung	Get-together in der Ausstellung				

Dienstag, 16. Oktober

	07:30 Uhr	Running LS-DYNA	Bring your Running Shoes				
			Raum 1	Raum 2	Raum 3	Raum 4	Raum 5
Ausstellung	09:00 - 10:20 Uhr	Parallel	Crash - Punctual Connections	Pedestrian Safety	Process - Metal Forming III	Simulation Data Management II	Workshop: Mat.Parameter
	11:00 - 12:20 Uhr	Parallel	Crash Materials, Failure	Topology and Form Optimization	Process - Welding Heat Treatment	Workshop: SDM	Workshop: VALIMAT
			Plenum – Hegelsaal				
	13:40 - 15:10 Uhr	Plenum	Keynote Presentations *				
			Raum 1	Raum 2	Raum 3	Raum 4	Raum 5
	15:40 - 17:00 Uhr	Parallel	Crash - Railway Vehicles/Impact	Material Characterization	Process - Rolling and Bending	HPC, Cloud Comp./Services	Workshop: Primer
	17:30 - 18:30 Uhr	Parallel	Crash Road Safety	Optimization: Material, Statistics	Process - Forming and AM	Optimization Processes	Workshop: GNS Open Form
	19:15 Uhr	Ausstellung	Sektempfang in der Ausstellung				
	ab 20:00 Uhr	Hegelsaal	Abendveranstaltung im Hegelsaal				

Mittwoch, 17. Oktober

			Raum 1	Raum 2	Raum 3	Raum 4	Raum 5
Ausstellung	09:00 - 10:20 Uhr	Parallel	Fluid and Ice Structure Interact.	Materials - SFRP	Process - ARENA2036	Simulation - Bolts/Delamination	Workshop: GISSMO
	11:00 - 12:20 Uhr	Parallel	Simulation - IGM/FE Techn.	Materials - Misc.	Fatigue and NVH	Biomedical	Workshop: Mapping Tool Envyo
			Plenum – Raum 1 + Raum 2				
	13:30 - 15:00 Uhr	Plenum	Keynote Presentations				
	15:00 Uhr	Plenum	Verabschiedung				

* Simultaneous translation into English.

AGENDA – MONTAG, 15. OKTOBER 2018

Plenum Hegelsaal (Kongresshalle)

PLENUM

KEYNOTE-VORTRÄGE

13:00 **Welcome and Introduction**
U. Franz (DYNAmore)

13:10 **Recent Developments – Part I**
J. Wang (LSTC)

13:40 **Reliable Simulation Techniques in Solid Mechanics. Development of Non-standard Discretization Methods, Mechanical and Mathematical Analysis**
Prof. J. Schröder (Univ. Duisburg-Essen)

14:10 **Aspekte der Crashsimulation**
M. Feucht (Daimler)

14:40 **Kurzvortrag Intel & Fujitsu**

14:55 **Kurzvortrag AMD**

15:10 Pause

PARALLEL

	Raum 1	Raum 2	Raum 3
	CRASH MODEL BUILDING	**OCCUPANT SAFETY I**	**PROCESS METAL FORMING I**
15:40	**Model Organization, Quality and Management for Crash Simulation Engineering on Different Vehicle Body Lines at Porsche** M. Koch (Porsche), S. Mattern (DYNAmore), R. D. Bitsche (SCALE)	**Recent Airbag CPM Enhancement** J. Wang (LSTC)	**Aspekte bei der Modellierung mehrstufiger Umformprozesse mit expliziten und impliziten Methoden** M. Fleischer, I. Heinle, H. Grass, J. Meinhardt, J. M. Saubiez (BMW)
16:00	**The Role of LS-DYNA in the Design of the New London Electric Taxi** J. Dennis, S. Hart, G. Newlands (Arup)	**Scalability Study of Airbag Particle Method with Dynamic Load Balancing** H. Teng (LSTC)	**Forming Simulation at MAHLE by the Example of the Cooling Fin Production** A. Gehring, W. Kühnel (MAHLE)
16:20	**Crash Simulation of Short Glass Fiber Reinforced Polypropylene with Analysis of the Failure Probability** N. Sygusch, B. Lauterbach (Opel), Prof. S. Kolling (TU Mittelhessen); J. Schneider (TU Darmstadt)	**IIHS Side Impact Evaluations** S. Arnold-Keifer, Prof. S. Weihe, F. Panzer (Univ. of Stuttgart), Prof. S. Kan, Prof. R. Reichert (George Mason Univ.)	**Implizite Umformsimulation der wirkmedien-basierten Umformung ohne Formwerkzeug** A. Metzger, D. C. Ruff, T. Ummenhofer (KIT)

16:40 Pause

PARALLEL

	Raum 1	Raum 2	Raum 3
	CRASH LIGHTWEIGHT COMPOSITES	**OCCUPANT SAFETY II**	**PROCESS METAL FORMING II**
17:10	**Crash Simulation of Fibre Metal Laminates** T. Schulte, L. Eckstein (RWTH Aachen), K. Seidel (fka)	**Occupant Protection in Alternative Seating Positions** Prof. M. Boin (Hochschule Ulm)	**Modellierung und Optimierung von Ziehsicken mittels neuronaler Netze** S. Leocata, T. Senner, H. Grass (BMW), Prof. A. Brosius (TU Dresden)
17:30	**Modelling the Interface of Hybrid Metal-FRP Components Joint by Form Closures** M. Triebus, T. Tröster, A. A. Camberg (Univ. Paderborn), S. Bienia, K. Dröder (TU Braunschweig)	**Model Reduction Techniques for On-board and Parametric Crash and Safety Simulation** Prof. K. Kayvantash (CADLM)	**Analysis of Stress States during Experimental Determination of Cut-Edge Formability** M. Schneider, M. Teschner, S. Westhäuser (Salzgitter Mannesmann Forschung)
17:50	**WoodC.A.R. – Wood Composites for Functional Vehicle Structures** C. Kurzböck, T. Jost (Das virtuelle Fahrzeug), U. Müller (Univ. Wien), F. Feist (TU Graz), S. Hartmann (DYNAmore)	**A New Advanced THOR 5th Crash Test Dummy Finite Element (FE) LS-DYNA Model Development Representing Small Female Occupant** F. Zhu, F. Schüssler (Humanetics Europe)	**Möglichkeiten, Herausforderungen und Risiken bei der Erstellung von Materialkarten für die Umformsimulation aktueller Stahlfeinbleche** T. Beier, J. Gerlach, S. Sikora, L. Keßler (thyssenkrupp)
18:10	**Umformsimulation für endlosfaserverstärkte Thermoplaste mittels *MAT_249** E. Chowson, M. Wrensch (Brose Fahrzeugteile), T. Klöppel (DYNAmore), W. Körbel, T. Mattner (Univ. Erlangen)	**FLEX-PLI GTR Regulated Borderline LS-DYNA Finite Element (FE) Model Development** F. Zhu, C. Shah, C. Brockhusen (Humanetics Europe)	**Model Set Up, Analysis and Results of the Inverse Forming Tool in ANSA** E. Iordanidou, G. Mokios, S. Porikis (BETA CAE Systems)

18:30 **Ende der Sessions**

19:15 GET-TOGETHER IN DER AUSSTELLUNG

Programmänderungen vorbehalten.

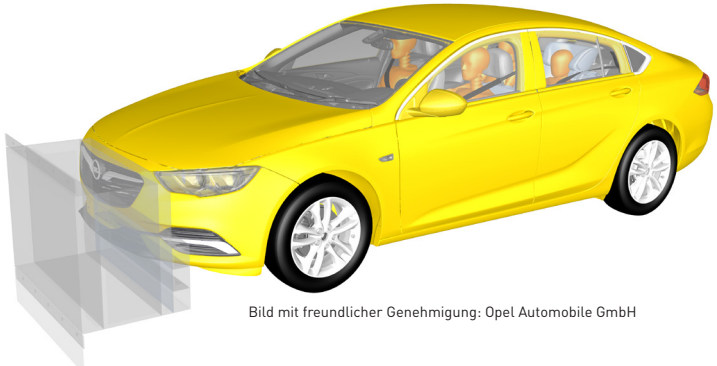
15:10 Pause

	Raum 4	Raum 5
PARALLEL	**CIVIL ENGINEERING**	**WORKSHOP**
15:40	**How to make a Virtual Twin of a Complex Slender Structure like a High Voltage Transmission Tower?** Prof. T. Tryland (SINTEF Manufacturing, Raufoss)	**Welding and Heat Treatment with DynaWeld** T. Loose (DynaWeld) The workshop presents the state of the art of simulation capabilities and its benefits. Not only stand alone simulation but also multi stage simulations as well as process chain simulations are feasible. The example of preheating welding, quenching and tempering of an axle gear connection including prior material simulation will demonstrate this. The DynaWeld preprocessor guarants an facil setup of these simulation models including multi stage and assembly simulations. The meta-language technique enables the implementation in existing software solutions at the customer to close the gap of welding or heat treatment.
16:00	**Finite Element Modeling of Long-Span Steel Suspension Bridges in Civil Engineering** Prof. S. A. Kilic (Bogazici Univ.), H. J. Raatschen (FH Aachen), B. Körfgen (Forschungszentrum Jülich)	
16:20	**Blast Response of Slabs in Reinforced Concrete Buildings** G. Yazici (Istanbul Kültür Univ.), Prof. S. A. Kilic (Bogazici Univ.)	

16:40 Pause

	Raum 4	Raum 5
PARALLEL	**SIMULATION DATA MANAGEMENT I**	**WORKSHOP**
17:10	**Prospects of Integrating CAD and CAE in Simulation Data Management** C. Knehler (Audi), M. Thiele, D. Matthus, P. Friedrich (SCALE)	**Material Characterization** M. Helbig, D. Koch (DYNAmore) In order to obtain the most realistic simulation results possible, it is essential to describe the material behavior very accurately. In LS-DYNA more than 200 material models are implemented, of which usually only a much smaller selection is used in everyday work. In this workshop, practical advice is given on how to create material cards. The most important models for metals and thermoplastics will be presented and the determining adjusting screws will be explained. In addition, practical examples will be used to show which tests are necessary to calibrate the material cards.
17:30	**A Unified Environment for Collaborative CAE and Immersive Simulation Results' Processing** A. Perifanis, S. Kleidarias (BETA CAE Systems)	
17:50	**Solution for Evaluation, Assessment and Reporting of Simulation and Test Result Data** G. Geißler, A. Kumar (SCALE)	

18:10



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18:30 Ende der Sessions

19:15 **GET-TOGETHER IN DER AUSSTELLUNG**

AGENDA – DIENSTAG, 16. OKTOBER 2018 – VORMITTAG

	Raum 1	Raum 2	Raum 3
PARALLEL	CRASH PUNCTUAL CONNECTIONS	PEDESTRIAN SAFETY	PROCESS METAL FORMING III
09:00	**Daten- und prognosebasierte Generierung von Modellparametern für die Crashsimulation mechanisch gefügter Verbindungen** P. Rochel, S. Sommer (Fraunhofer IWM), M. Guenther, D. Herfert, (Gesellschaft zur Förderung angewandter Informatik), G. Meschut, P. Giese (Univ. Paderborn)	**Challenges of the Early Virtual Development Phase of Plastic Components in Low-Speed Test and Pedestrian Protection Load Cases** C. Kurzböck (Das virtuelle Fahrzeug), M. Groß (BMW), B. Fellner, H. Kassegger (Magna Steyr Fahrzeugtechnik), T. Paier (ZKW Lichtsysteme)	**DYNAFORM 6.0 Highlights** J. Chen (Engineering Technology Associates)
09:20	**Numerical Investigation of a Blind Rivet Nut Screw System in LS-DYNA** N. Fuchs, T. Nehls (Fraunhofer IGP), M. Felsberg (GESIPA Blindniettechnik), I. Lepenies (SCALE)	**Recent Developments in *DEFINE_PRESSURE_TUBE for Simulating Pressure Tube Sensors in Pedestrian Crash** J. Karlsson (DYNAmore Nordic)	**The Influence of Damage Accumulation on Failure Prediction: A Comparative Assessment of *MAT_224 and *MAT_024 + GISSMO for the Application in Non-Isothermal Sheet Metal Forming** A. Camberg, T. Tröster (Univ. Paderborn), A. Schneidt, N. Sotirov, J. Tölle (Benteler Automobiltechnik)
09:40	**Modeling of Joints with Plug Out Separation Modes by Utilizing Cohesive Shells for Full Vehicle Safety Models** N. Pasligh (Ford), E. Ertugus (RWTH Aachen), T. Erhart (DYNAmore)	**Comparison of Failure Stress Distributions in Automotive Windscreens by Experiment and Simulation** C. Brokmann, C. Alter, Prof. S. Kolling (TH Mittelhessen)	**Ermittlung und Optimierung von temperaturabhängigen Versagenskurven für hochfeste Aluminiumlegierungen im Hotforming-Prozess** J. Schlosser (Hochschule Aalen/ Glasgow Univ.), R. Schneider, W. Rimkus (Hochschule Aalen), S. Mouchtar, D. Harrison, M. Macdonald, M. Kulatunga (Glasgow Univ.)
10:00	**Ein „Non-Local" Modellansatz für die Rissinitiierung an punktförmiger Fügetechnik ohne lokaler Netzanpassung** T. Heubrandtner, K. Kunter, M. Koplenig (Das virtuelle Fahrzeug), T. Porsch (Volkswagen), B. Fellner (Magna Steyr Fahrzeugtechnik), J.-D. Martinez (Audi)	**Benefits of Cloud-based Apps for Simulation: Pedestrian Safety** M. Seshadri, A. Gittens (ESI)	**Numerical Modeling of Single-Step Thermoforming of a Hybrid Metal/FRP Lightweight Structure** J. Ziegs, D. Weck, M. Gude, M. Kästner (TU Dresden)
10:20	Pause		

	Raum 1	Raum 2	Raum 3
PARALLEL	CRASH MATERIALS, FAILURE	TOPOLOGY AND FORM OPTIMIZATION	PROCESS WELDING AND HEAT TREATMENT
11:00	**Linking Process & Product Simulation for Considering Local Material Properties in Crash Simulation** B. Eck, G. Le Lan, R. Schaefer (Faurecia Composite Technologies)	**LS-TaSC Product Status/LS-TaSC 4: Designing for the Combination of Impact, Statics and NVH** K. Witowski (DYNAmore), W. Roux, G. Yi, I. Gandikota (LSTC)	**Recent Updates to the Structural Conjugate Heat Transfer Solver of LS-DYNA** T. Klöppel (DYNAmore)
11:20	**News About the Add-on Failure and Damage Models in LS-DYNA** T. Erhart (DYNAmore)	**Efficient Analysis of Topological Sensitivities for Crash Problems using LS-DYNA Implicit** K. Weider, Prof. A. Schumacher (Univ. Wuppertal)	**Simulation Chain of Material Simulation, Heat Treatment Simulation and Welding Simulation for Industrial Application** T. Loose, J. Prehm, J. Rohbrecht (DynaWeld), U. Diekmann, (Matplus)
11:40	**Rissausbreitung im Crash – ein neuer Ansatz ohne lokale Feinvernetzung** K. Kunter, T. Heubrandtner, M. Koplenig (Das virtuelle Fahrzeug), B. Fellner (Magna Steyr Fahrzeugtechnik), J.-D. Martinez (Audi)	**Aktuelle Schlüssel Herausforderungen in Topologie- und parametrischer Optimierung angehen: 1. wandeln Topologie Optimierung organisch anmutende Ergebnisse in 3D Flächengeometrie Modell um, 2. verwenden Substrukturierung Methode für die Optimierung der Subsysteme eines vollständigen Modells, in einer prozessgeführten Umgebung** A. Kaloudis (BETA CAE Systems)	**Welding Structure Simulation – Extended Beyond the Borders of Academic Testcases - Exemplarily Demonstrated by Simulating the Assembly of Welded Car Body Components. Introduction of the „Free Motion-Filler-Technology"** J. Rohbrecht, T. Loose (DynaWeld)
12:00	**Analyses on the Strain-Rate Dependent Fracture Behaviour of PMMA for Stochastic Simulations** M. Berlinger, P. Schrader, Prof. S. Kolling (TH Mittelhessen)	**Shape Optimization for CFD Analysis using LS-OPT, ANSA and LS-DYNA ICFD** K. Witowski (DYNAmore), F. Del Pin, I. Çaldichoury, R. R. Paz, C.-J. Huang (LSTC)	**LS-DYNA Developments in Thermal Radiation – *BOUNDARY_RADIATION_ENCLOSURE** G. Blankenhorn, R. Grimes, F. Rouet (LSTC)
12:20	Mittagessen		

Programmänderungen vorbehalten.

PARALLEL

Raum 4

SIMULATION DATA MANAGEMENT II

09:00 **Advanced Results Databases Compression Techniques to Allow their Efficient Use in Results Data Management Systems**
A. Perifanis, D. Siskos (BETA CAE Systems)

09:20 **Pushing Storage and Bandwidth Requirements of SDM Towards Reasonable Levels**
M. Büchse, M. Thiele (SCALE)

09:40 **Automatic Detection of Unexpected Crash Behaviour Parallel to Design Improvement Phases**
D. Borsotto, L. Jansen, C. Thole (SIDACT)

10:00 **Analyzing Simulations with Machine Learning**
C. Diez (Lasso Ingenieurgesellschaft)

Raum 5

WORKSHOP

Material Parameter Identification
K. Witowski, C. Ilg (DYNAmore)

In this workshop a short introduction to LS-OPT will be given, and the application of LS-OPT for calibration of material parameters will be presented.

The new LS-OPT features for the usage of digital image correlation data for calibration of material parameters will be discussed by means of an application example.

10:20 Pause

PARALLEL

Raum 4

WORKSHOP

11:00 **SDM and CAE-Processes with SCALE Solutions**

The workshop gives an overview of the SCALE SDM products such as LoCo, CAViT and Status.E.

11:20 There will be a discussion on how to benefit from SCALE solutions as a user or project manager. The application of selected uses cases will be presented within live demos. Examples of typical CAE workflows and process automation using SCALE SDM applications are introduced.

11:40 A lively discussion at the end of the workshop is very welcome to investigate a potential integration of SDM software in your environment.

12:00

Raum 5

WORKSHOP

VALIMAT

The software solution VALIMAT enables the generation of validated material cards based on tests results (e.g. bending, tensile, ...) for static and especially dynamic applications.

The necessary dynamic measurement data (bending, tensile, compression or puncture tests) can be generated easy and quickly by pendulum testing device IMPETUS. Based on well-defined workflows in VALIMAT material cards can be generated straight forward for LS-DYNA material models.

Following topics will be covered:

- VALIMAT introduction & new features in v3.5
- Dynamic Tensile Tests with IMPETUS - a New Available Test Method
- Usage of VALIMAT – Live

12:20 Mittagessen

Bild mit freundlicher Genehmigung: BMW Group

Plenum Hegelsaal (Kongresshalle)

PLENUM

KEYNOTE-VORTRÄGE

13:40 **Virtueller Versuch bei Knorr-Bremse**
F. Günther (Knorr-Bremse)

14:10 **Integration neuer graphischer Auswertemethoden zur verbesserten Erkennung von Blechversagen unter dem Einfluss nicht-linearer Dehnungspfade**
Prof. P. Hora (ETH Zürich)

14:40 **Charakterisierung und Modellierung des Crashverhaltens von verschiedenen Werkstoffen und Verbindungen**
S. Sommer (Fraunhofer IWM)

15:10 Pause

PARALLEL

	Raum 1	Raum 2	Raum 3
	CRASH RAILWAY VEHICLES AND IMPACT	**MATERIAL CHARACTERIZATION**	**PROCESS ROLLING AND BENDING**
15:40	**Crashsimulation in der Schienenfahrzeug-industrie** A. Piasetzki (Bombardier)	**Werkstoffcharakterisierung – Rateneffekte, Skaleneffekte, Schädigung, Instabilität und adiabatische Erwärmung** F. Huberth, D.-Z. Sun, S. Klitschke, A. Trondl, J. Lienhard, M. Hauber, D. Discher, S. Sommer (Fraunhofer IWM)	**Weiterentwickeltes Warmwalzsimulations-modell von Aluminiumlegierungen für die Berücksichtigung des Bandprofils** P. Simon, G. Falkinger (AMAG), K. Zeman, T. Pumhössel (JKU Linz)
16:00	**Kurzzeitdynamische Stauchuntersuchungen an Absorberkomponenten aus GFK** M. Holzapfel, M. Vinot, M. Kaden, D. Fricke (DLR)	**Characterization of a Polyurethane Adhesive and Comparative Calibration of Different Material Models in LS-DYNA** M. Gall, S. Sommer (Fraunhofer IWM); F. Zerling, T. Wagner, R. Schlimper (Fraun-hofer IMWS)	**Optimization of Tooling Design for Hot Mandrel Bending of Pipe Elbows** J. Prehm (DynaWeld), U. Diekmann (Matplus), W. Homberg, D. Tabakajew, T. Rostek (Pader-born Univ.), A. Trasca (Metatech), N. Schönhoff, H. Uysal (Lindemann)
16:20	**Beam Modeling of Hydraulic Energy Absorbers** P. Heinzl, R. Graf, G. Gough (Siemens Mobility), C. Schmied (DYNAmore)	**Testing and Modeling of Rubber Toughened Thermoplastics with LS-DYNA** M. Helbig, A. Haufe (DYNAmore)	**Freiformbiegen mit rollierendem Biege-kopf, Simulation des strukturmechanischen Prozesses** Prof. M. Gitterle (Hochschule München), C. Fritzsche (TU München), P. Schüle (Schüle)
16:40	**Experimentelle und numerische Unter-suchung von schlagbelasteten Aramid-gewebeverbunden** M. Mehrkens, D. John (imk automotive)	**Material Models for Thermoplastics in LS-DYNA from Deformation to Failure** P. Reithofer, A. Fertschej, B. Hirschmann, B. Jilka, M. Rollant (4a engineering)	**Characterization of the Metal Sheet Forming by Free Bending with LS-DYNA** N. Fuchs, P. Froitzheim, Prof. W. Flügge (Fraunhofer IGP), Prof. C. Woernle (Univ. Rostock)

17:00 Pause

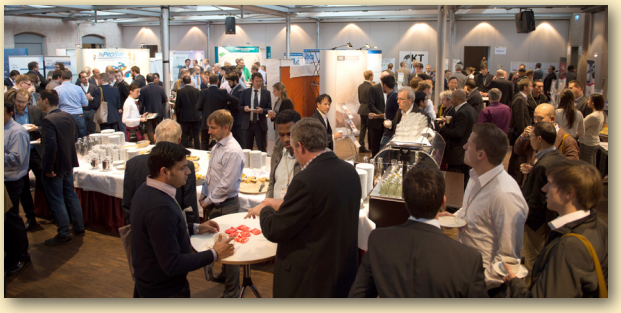
PARALLEL

	Raum 1	Raum 2	Raum 3
	CRASH ROAD SAFETY	**OPTIMIZATION: MATERIAL PARAMETERS & STATISTICAL CLASSIFIERS**	**PROCESS - FORMING AND ADDITIVE MANUFACTURING**
17:30	**Crash-Simulation von Fahrzeugen an Schutzeinrichtungen der Straße** B. Fröhlich (Bundesanstalt für Straßenwesen)	**Applications and Potential of Statistical Classifiers in LS-OPT** A. Basudhar, I. Gandikota, N. Stander, D. Kirpicev (LSTC), K. Witowski (DYNAmore)	**Thermoplastic Fiber Reinforced Plastics: Material Characterization and Draping Simulation** C. Ilg, E. Sola, A. Haufe, N. Karajan (DYNAmore), K. Demnitz, Prof. M. Gude (TU Dresden)
17:50	**Robustness Evaluation of Different Impact Situations for Road Safety Guardrail** J. Drozda, R. Schlegel (Dynardo); T. Rotter (TU Prague)	**Full-Field Material Calibration using LS-OPT** N. Stander, A. Basudhar, S. Bala, I. Gandikota, S. DuBois, D. Kirpicev (LSTC), H. Keshtkar, A. Patil, A. Sheshadri, P. DuBois (Fiat Chrysler Automobiles)	**Simulation Strategies for Additive Manufacturing with LS-DYNA** C. Liebold (DYNAmore)
18:10		**Parameter Identification of the *MAT_036 Material Model using Full-Field Calibration** C. Ilg, A. Haufe, D. Koch, K. Witowski (DYNAmore), A. Svedin (DYNAmore Nordic), N. Stander (LSTC), Prof. M. Liewald (Univ. Stuttgart)	**Simulation of Different Path Strategies of Wire-Arc Additive Manufacturing with Lagrangian Finite Element Methods** J. Buhl, R. Israr, L. Nguyen, M. Bambach (BTU Cottbus-Senftenberg)
18:30	**Ende der Sessions**		

19:15 SEKTEMPFANG IN DER AUSSTELLUNG

20:00 ABENDVERANSTALTUNG IM HEGELSAAL

Programmänderungen vorbehalten.



15:10 Pause

PARALLEL

Raum 4

HPC, CLOUD COMPUTING, SERVICES

15:40 **HPC in der Cloud – Moderne IT Architekturen effizient nutzen. Die Sicht eines unabhängigen Dienstleisters**
C. Woll, S. Riedel, M. Lachnit (GNS Systems)

16:00 **Hybrid Cloud Cluster Solutions for HPC and IOT – Challenges, Impact and Industrial Use Cases**
A. Heine (CPU 24/7)

16:20 **Lizenz-Monitoring: Echtzeit-Analyse offenbart tatsächlichen Bedarf**
F. Moegle-Hofacker, H. W. Köster (GNS Systems)

16:40 **N.N.**
n.n. Rescale

Raum 5

WORKSHOP

Oasys Primer

Oasys PRIMER is a leading pre-processor for LS-DYNA which is widely used by automotive OEM's and suppliers worldwide. Oasys PRIMER is the pre-processor designed to make preparation and modification of LS-DYNA models as quick and as simple as possible.

This workshop will be informative for new as well as experienced users. We will cover the core functionality and benefits, including comprehensive model checking, LS-DYNA keyword support and model modification and investigation tools. We will also discuss more advanced tools, such as occupant positioning, seatbelt fitting, loadcase setup and scripting.

Finally, we will look at how Oasys PRIMER is integrated with the Oasys post-processing tools to enable swift analysis of results and feedback to the input deck – to help produce quality, error-free LS-DYNA models.

17:00 Pause

PARALLEL

Raum 4

OPTIMIZATION PROCESSES

17:30 **ACP OpDesign Optimal Design Gateway Multimaterial Lightweighting Door System**
A. Farahani, D. Mittal, M. Zhang (Engineering Technology Associates)

17:50 **Packaging Optimization Driven by Parametric Morphing: Development of an Automatic Methodology**
A. Ortalda, C. Martin (EnginSoft)

18:10 **Automatic Shape Optimization of a Rivet – Coupling modeFRONTIER and LS-DYNA**
C. Martin, A. Ortalda (EnginSoft)

18:30 **Ende der Sessions**

Raum 5

WORKSHOP

GNS Open Form

The workshops feature both informative and how-to knowledge with demonstrations of the latest features from experts.

The aim is to provide the attendees with insights, limits and merits of the topic.

It facilitates the understanding by showcasing simple examples that explain the methods. Besides the presentation there will be time for interactions between the presenters and the audience.

19:15 **SEKTEMPFANG IN DER AUSSTELLUNG**

20:00 **ABENDVERANSTALTUNG IM HEGELSAAL**

AGENDA – MITTWOCH, 17. OKTOBER 2018

	Raum 1	Raum 2	Raum 3
PARALLEL	FLUID-STRUCTURE AND ICE-STRUCTURE INTERACTION	MATERIALS - SHORT FIBER REINFORCED POLYMERS	PROCESS ARENA 2036
09:00	**Washing Machine Outlet Hose Analysis in Full Water Condition using SPH Elements** C. Desai, S. Vishwakarma (Whirlpool of India)	**Multi-Scale Material Modeling Applied from Specimen to Full Car Level with LS-DYNA** S. Calmels (e-Xstream Engineering)	**ARENA2036 & the Digital Prototype: Introduction and Overview** P. Böhler, J. Dittman (Univ. Stuttgart), H. Finckh, F. Fritz (Deutsches Institut für Textil- und Faserforschung Denkendorf (DITF)), A. Haufe, C. Liebold (DYNAmore), M. Holzapfel, M. Vinot (DLR)
09:20	**Fluid Structure Interaction Simulation of Hood Flutter** L. Rovira Crespo, J. Dilworth, P. Young (Arup)	**Influence Parameters on the Behavior of Short Fibre Reinforced Polyamide with Focus on Humidity and Integrative Simulation** S. Seichter, R. Steinberger, S. Ilincic (Hirtenberger Automotive Safety), W. Hahn (Hilti), M. Morak (PCCL), P. Reithofer (4a engineering)	**Textile Process Simulation for the Digital Simulation Chain** H. Finckh, A. Dinkelmann, F. Fritz, M. Imbert, Prof. G. T. Gresser (Deutsches Institut für Textil- und Faserforschung Denkendorf (DITF))
09:40	**Advanced Viscous Model for Viscous Friction Between Rough Rubber and Smooth Ice** A. Scattina, R. Leonardi (Politecnico di Torino), S. Scalera (DYNAmore Italy)	***MAT_4A_MICROMEC: Generating Material Card and Considering Fiber Orientation** P. Reithofer, A. Fertschej, B. Jilka (4a engineering)	**Infiltration Simulation and Virtual Permeability Determination for the Digital Prototype** J. Dittmann, P. Middendorf (Univ. Stuttgart)
10:00	**Simulation of Ice-Structure Interaction with CZM-Elements** H. Herrnring, L. Kellner, J. M. Kubiczek, S. Ehlers (TU Hamburg)	**Influences of LS-DYNA Results by Coupling with Injection Molding Simulation** T. Schäfer, C. Hinse (SimpaTec)	**A Multiscale Strategy for the Simulation of Braided Composites with ENVYO** M. Vinot, M. Holzapfel (DLR), C. Liebold (DYNAmore)
10:20	Pause		

	Raum 1	Raum 2	Raum 3
PARALLEL	SIMULATION - ISOGEOMETRIC AND FE TECHNOLOGY	MATERIALS - ORTHOTROPIC PLASTICITY, DAMAGE, FAILURE	FATIGUE AND NVH
11:00	**Explicit Isogeometric Crash Analysis on Trimmed NURBS-Based Multi-Patch CAD Models in LS-DYNA** L. Leidinger (BMW Group/TU München), M. Breitenberger, A. M. Bauer, R. Wüchner, Prof. K.-U. Bletzinger, Prof. F. Duddeck (TU München), S. Hartmann (DYNAmore), L. Song (BMW Group)	**A Hosford-Based Orthotropic Plasticity Model in LS-DYNA** F. Andrade (DYNAmore), T. Borrvall (DYNAmore Nordic), P. DuBois (Consultant), M. Feucht (Daimler)	**Updated Fatigue Analysis with LS-DYNA** Y. Huang, Z. Cui (LSTC)
11:20	**Sheet Metal Forming Simulation with IGA in LS-DYNA** S. Hartmann (DYNAmore), D. J. Benson, L. Li, A. P. Nagy (LSTC)	**On the Development of a New Generalized Orthotropic Damage and Fracture Model** D. Koch, F. Andrade, A. Haufe (DYNAmore), P. DuBois (Consultant), M. Feucht (Daimler)	**Analysis of the Correlation Between the Fatigue Behavior of Remote-Laser Cut Fiber-Reinforced Polymers and Process Parameters** B. Schmidt, M. Rose, Prof. M. Zimmermann, Prof. M. Kästner (TU Dresden)
11:40	**A Study on the New Higher-Order Solid Elements in LS-DYNA** C. Schmied, T. Erhart (DYNAmore)	**Nonlocal Damage and Failure Options in LS-DYNA** G. Blankenhorn, J. Wang, L. Bindeman (LSTC), T. Erhart (DYNAmore)	**Direct Steady State Dynamic (SSD) Analysis with LS-DYNA** Y. Huang, Z. Cui, F.-H. Rouet, C. Ashcraft, R. Grimes (LSTC)
12:00	**Optimization of Newmark-Euler Time-Integration Parameters for a Stable and Efficient Implicit Simulation of Rotating Elastic Structures** M. Kober, A. Kühhorn (BTU Cottbus-Senftenberg), A. Keskin (Rolls-Royce)	**A Modifed In-Plane Constitutive Model for Paperboard** M. Pfeiffer, Prof. S. Kolling (TH Mittelhessen), P. Stein, W. Franke (TU Darmstadt)	
12:20	Mittagessen		

Plenum Kongresshotel (Raum 1 + Raum 2)

PLENUM	KEYNOTE-VORTRÄGE
13:30	**Simulation for Gaudi's Sagrada Familia Basilica, Barcelona** R. Sturt (Arup)
14:00	**LS-OPT: Status and Outlook** N. Stander (LSTC)
14:30	**Recent Developments - Part II** J. Wang, Y. Huang (LSTC), T. Erhart (DYNAmore)
15:00	**Closing remarks** T. Münz (DYNAmore)
15:15	**Ende des Forums**

Programmänderungen vorbehalten.

PARALLEL

Raum 4

SIMULATION - BOLTS AND DELAMINATION

09:00 **CAE Bolt Assessment in Car Seat Structures**
S. Sinne, J. Gehrlich, P. Partheymüller (Brose Fahrzeugteile)

09:20 **Modeling Bolts in LS-DYNA Using Explicit and Implicit Time Integration**
N. Karajan, A. Gromer, M. Schenke (DYNAmore), T. Borrvall (DYNAmore Nordic), K. Pydimarry (Honda)

09:40 **Power Apps – Make Access to Your CAE Simpler, More Efficient and More Economic**
J. Friebe (ISKO engineers)

10:00 **Modelling of a Traditional Bow and Arrow – Material Modelling and Dynamic Simulation**
G. Baumann, G. Schickhofer, S. Zimmer, F. Feist (TU Graz)

Raum 5

WORKSHOP

Failure Prediction in Crash Simulations with the GISSMO Model
F. Andrade (DYNAmore)

This workshop is indicated to all LS-DYNA users who want to make the first steps regarding failure modeling in crash simulations.

The subject will be addressed during the workshop where relevant aspects concerning failure prediction will be reviewed and the application of the GISSMO model for such simulations will be demonstrated.

10:20 Pause

PARALLEL

Raum 4

BIOMEDICAL

11:00 **FE-Simulation of Impact Loads on the Human Body: Methodology for the Development of Tissue Models**
Z. Wang, R. Behrens, N. Elkmann (Fraunhofer IFF)

11:20 **Numerical Analysis of Stent Delivery Systems during Pre- and Intraoperative Processes**
M. Geith (OTH Regensburg/TU Graz), Prof. G. Holzapfel (TU Graz/ Norwegian University of Science and Technology), K. Swidergal, T. Schratzenstaller, Prof. M. Wagner (OTH Regensburg)

11:40 **Characterization of Friction for Human Impact Simulation in Vehicle Crash Applications**
S. Dong (Ohio State University), A. Sheldon (Honda R&D Americas)

12:00

Raum 5

WORKSHOP

Mapping Tool Envyo
C. Liebold (DYNAmore)

Envyo is a multi-purpose mapping tool which was introduced to the public in 2016 during the German LS-DYNA Forum.

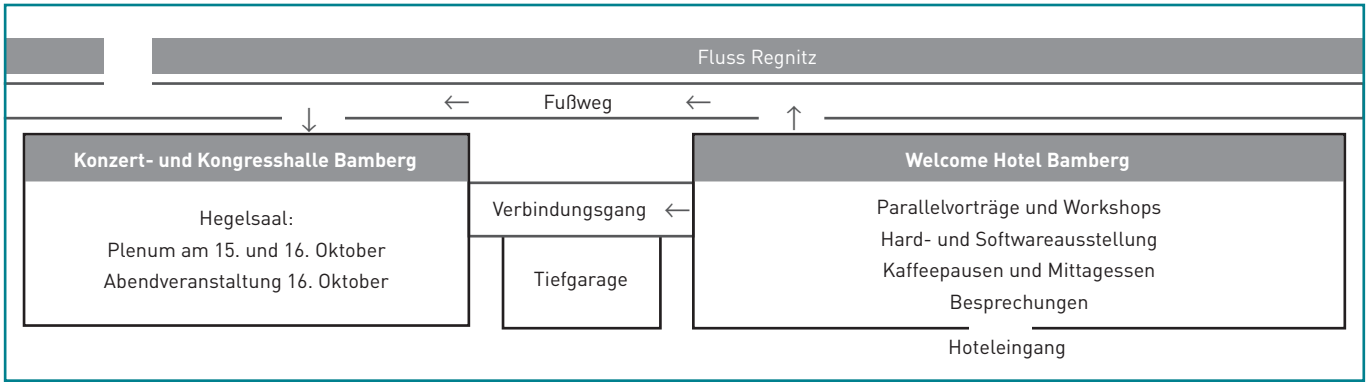
The goal of this workshop, is to present the already implemented mapping capabilities and to demonstrate their usage. The general need to map simulation results is shown with the aid of dedicated examples.

The workshop is closed with an open discussion where you can place your own ideas for future mapping developments.

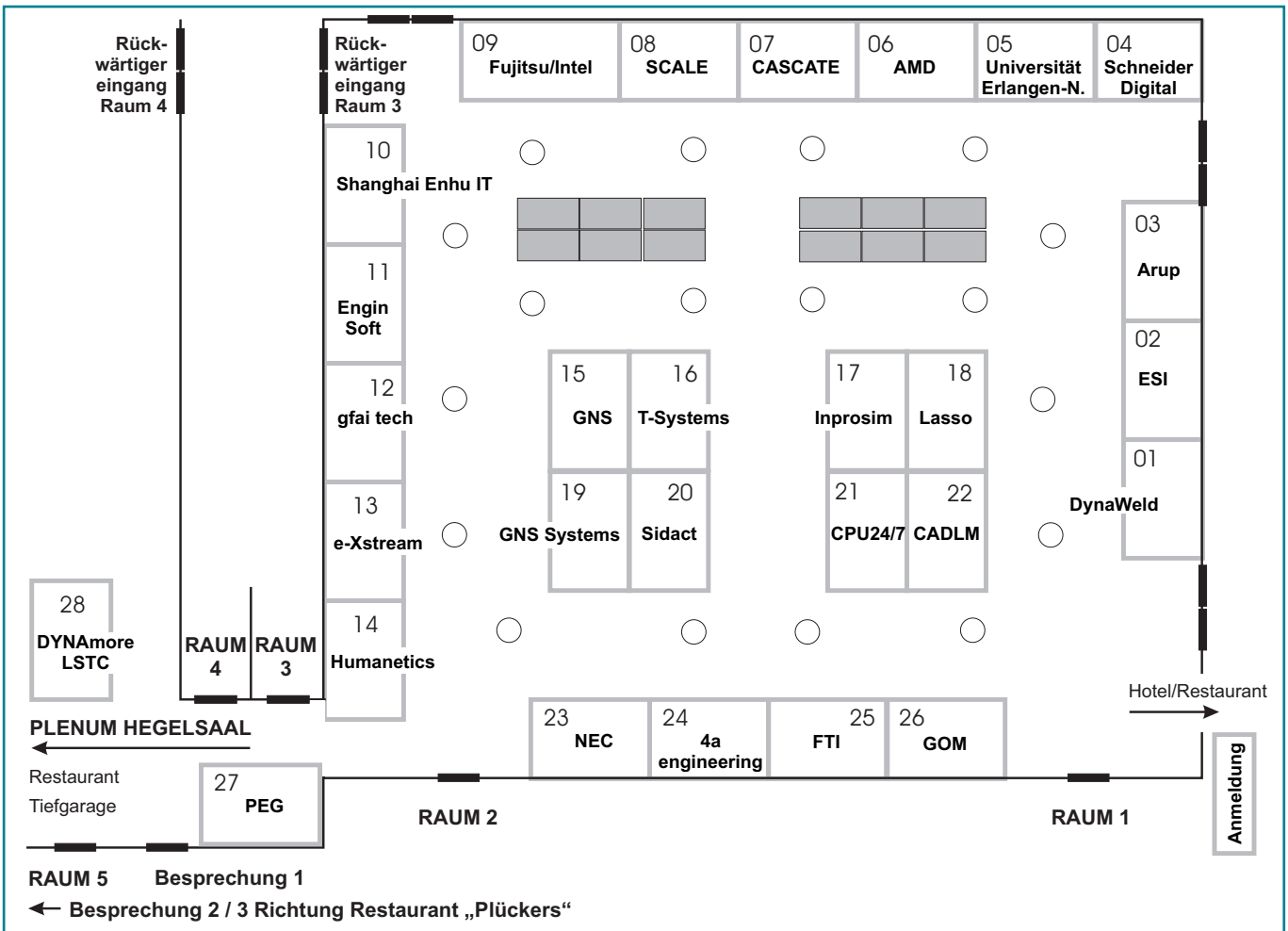
12:20 Mittagessen

Bild mit freundlicher Genehmigung: Dr. Ing. h.c. F. Porsche AG

Raumübersicht



Hard- und Softwareausstellung



Aussteller

Stand	Firma	Stand	Firma	Stand	Firma
24	4a engineering	11	Enginsoft	23	NEC
06	AMD	25	Forming Technologies	27	PEG
03	Arup	09	Fujitsu/Intel	08	SCALE
22	CADLM	12	gfai tech	10	Shanghai Enhu Information Technology
07	CASCATE	15	GNS	04	Schneider Digital
21	CPU 24/7	19	GNS Systems	20	Sidact
28	DYNAmore/LSTC	26	GOM	16	T-Systems
01	DynaWeld	14	Humanetics	05	Universität Erlangen-Nürnberg
02	ESI	17	Inprosim		
13	e-Xstream	18	Lasso		