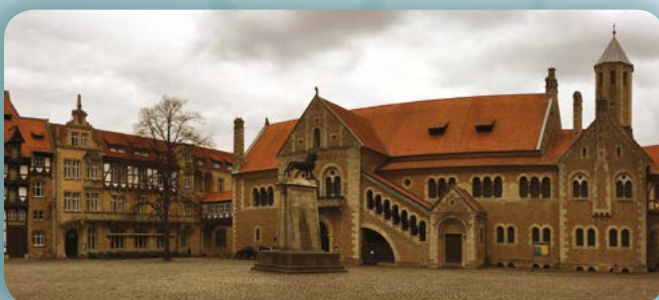


Tagungsprogramm/Event Program

European SIMULIA Multibody Simulation UGM
Deutsches SIMULIA-Anwendertreffen/German RUM
European SIMULIA Durability User Group Meeting

07.–10. November 2017, FourSide Hotel Braunschweig, Germany



3DEXPERIENCE®

WELCOME LETTER

On behalf of Dassault Systèmes SIMULIA, I would like to welcome you to this year's German User Event, comprising three events: the SIMULIA German Regional User Meeting, the Multibody Simulation User Group Meeting and the Durability User Group Meeting.

The aim of these three events is to bring you, the simulation user community closer together, enabling you to network with other users and experts in the simulation field, and give you an opportunity to meet SIMULIA Executives and Experts.

You will hear from other simulation users on how they are using Abaqus, Isight, Tosca, fe-safe, Simpack, CST, Wave6 and XFlow to innovate and improve the quality and designs of their products and processes. All three events will also bring you up to date with Dassault Systèmes SIMULIA's vision of the future, the latest R&D developments, and workflows from our Applications teams that will showcase the growing portfolio of solutions from SIMULIA, hopefully inspiring you to innovate for the future!

We start with the **Multibody Simulation User Group Meeting** on Tuesday, 7th November. As part of the SIMULIA brand, focused on realistic simulation, Simpack is now the core multibody simulation (MBS) component at Dassault Systèmes and is a cornerstone of the broader Dassault Systèmes offering across multiple brands.

The MBS UGM agenda is packed with highly technical user presentations from Biomotion Solutions, Daimler, Dresden University of Technology, Fraunhofer ITWM, MATISA, Mercedes Benz R&D, MesH Engineering, Toyota Motor Europe, University of Applied Sciences Bielefeld, and University of Shebrooke. The R&D Team have been very busy with two new Simpack releases since last year's meeting. We are excited to share with you these new product enhancements and to introduce you to new technical staff and technology partner solutions with presentations on topics such as the Simpack Development Update, FlexBodies and Electric Drive N&V Analysis.

The **SIMULIA German Regional User Meeting** takes place on Wednesday, 8th – Thursday, 9th November. This meeting brings together users to share their knowledge and experience in advancing methods and technology for finite element analysis, multiphysics, process automation, design optimization, fatigue analysis and simulation management. Attendees will discover new capabilities within Abaqus, the future strategies of SIMULIA, will be able to provide input on future software enhancements and network with other users to share experiences and new ideas.

With over 25 user presentations covering a wide range of industries and technologies, we have an inspiring and informative agenda. We are excited to have Martin Baker from Technische Universität Braunschweig as our Keynote Speaker, talking about his 20 years of experience working with Abaqus. Presentations from the SIMULIA team will focus on delivering simulation technology on the **3DEXPERIENCE®** platform, and technology updates for the wider portfolio of products, including CST Studio Suite for Electromagnetic Simulation, Wave6 for Vibroacoustics, XFlow for CFD and simulation solutions for Additive Manufacturing.



Finally, the **Durability User Group Meeting** takes place on Friday, 10th November. fe-safe is the durability tool now seamlessly integrated into the SIMULIA portfolio, thereby enabling stronger, lighter and more durable components. Some time ago we implemented a very simple fatigue application within the **3DEXPERIENCE** platform as part of our Stress Engineer Role. The first release of a Fatigue Specialist Role on the **3DEXPERIENCE** platform is now available.

We are proud to be joined by Professor Adolf Hobbacher, a Professor Emeritus at Jade University as our Keynote Speaker. Prof. Hobbacher, a world-renowned expert in weld fatigue, will share his many years of experience by presenting "Fatigue Verification Procedures for Welded Joints and Components — An Overview of Recent Developments".

We are very pleased to present user papers from American Axle & Manufacturing, Caterpillar Inc, Royal Enfield and Tenneco Automotive. The fe-safe team will dive deep into a wide range of topics such as Verity in fe-safe for weld fatigue, vibration fatigue, FKM Guidelines, Critical Distance Methods and durability analysis for additive manufacturing. Special attention is given to the value of integrating fe-safe with other SIMULIA products such as Abaqus, Isight, Tosca, XFEM and Simpack, shown through a series of workflows. Our Technology Update lecture shows you the new **3DEXPERIENCE** application and provides more detail on new technology within fe-safe.

Finally, I would like to thank each one of you, our customers, for making these User Events such successful events. You are our most important asset. We would not be where we are now without your continuous support and enthusiasm.

Thank you for attending this week of events. Let's move forward together with the common goal of using simulation to power innovation!

I hope you will find the events interesting, stimulating and entertaining — I look forward to meeting all of you.

Dimple Shah

VP Worldwide Sales, Dassault Systèmes SIMULIA

7. NOVEMBER — MULTIBODY SIMULATION USER GROUP MEETING

08:15	Doors Open & Registration	08:15
	Room Burj Kalifa — Session 1, Chairman: AXEL DEWES	
09:00	Welcome AXEL DEWES — Dassault Systèmes SIMULIA	09:00
09:05	SIMULIA Executive Summary MATTHIAS AUER — Dassault Systèmes SIMULIA	09:05
09:20	Simpack Development Updates WOLFGANG TRAUTENBERG — Dassault Systèmes SIMULIA	09:20
09:50	Simpack FlexBodies STEFAN DIETZ — Dassault Systèmes SIMULIA	09:50
10:10	Electric Drive Noise and Vibration Analysis THOMAS LIEBERNICKEL — Dassault Systèmes SIMULIA	10:10
10:30	Break & Exhibition	10:30
	Room Burj Kalifa — Session 2, Chairman: REMCO MANSVELDERS	
11:00	Implementation and Application of Simpact Multi-Attribute Vehicle Models at Toyota Motor Europe ERNESTO MOTTOLA — Manager, Vehicle Performance Engineering, Toyota Motor Europe NV/SA	11:00
11:30	Efficient Analysis of Drivetrain Induced Vibrations in Commercial Vehicles using an In-House Tool based on Simpact QtScript MARC LÄSSING — CAE Commercial Vehicles, Powertrain Functions, Drivetrain Vibrations/Mechatronics, Daimler AG	11:30
12:00	Advanced Methods for the Multibody Simulation of Valve Train Systems SÖREN HERWEG — Doctoral Candidate, Valve Train and Timing Drive, Digital Powertrain and Benchmark, Daimler AG	12:00
12:30	Lunch & Exhibition	12:30
	Room Burj Kalifa — Session 3, Chairman: MATTHIAS ANDERS	
13:30	Rear Axle Whine Simulation Methodology using Simpact MANASVI SAXENA — Senior CAE Analyst, RDI/CCD, Mercedes-Benz R&D India	13:30
14:00	DampIT: A Tool for the Identification of Physical Damping Coefficients of a Multibody Simulation Model ALIREZA REZAEIAN — MesH Engineering GmbH	14:00
14:30	Initial Experience for the Verification of Vehicle Models According to EN14363: 2016 Annex T ROLF NAUMANN — Institute of System Dynamics and Mechatronics, Workgroup Railway Vehicles, Univ. of Applied Sciences Bielefeld; CHRISTIAN MALLWITZ — Workgroup Railway Vehicles, University of Applied Sciences Bielefeld	14:30
15:00	Simulation of Running Railway Track Maintenance Trains at MATISA REMI ALLIOT — Dassault Systèmes SIMULIA JACQUES ZUERCHER — Head of Calculation Department, MATISA	15:00
15:30	Break & Exhibition	15:30
	Room Burj Kalifa — Session 4, Chairman: JAN ZEMAN	
16:00	Dynamic Simulation of the Inflation Gas of a Tire under Operational Conditions AXEL GALLREIN — Scientific Employee, Tire Model Group, Mathematical Methods in Dynamics and Durability, Fraunhofer ITWM	16:00
16:20	Simpact Biomotion Driver and Occupant Models for Single-Track, Multi-Track and Other Vehicles VALENTIN KEPPLER — Managing Director, Biomotion Solutions	16:20
16:40	Integration of Measured Receptance into a Time Domain Simulation of a Multibody Model using Simpact JOHANNES WOLLER — Research Associate in the Field of Vibration Technology Acoustics, at the Professorship Dynamics and Mechanism Design, Dresden University of Technology	16:40
17:00	Comparison of Semi-Analytical Methods for Frame Load Evaluation on a Recreational Vehicle NICOLAS JOUBERT — Master Degree Student, University of Sherbrooke	17:00
17:20	End of MBS UGM	17:20

8. NOVEMBER — DEUTSCHES ANWENDERTREFFEN/GERMAN RUM

09:30	Anmeldung/Registration			
	Saal/Room Burj Kalifa — General Session 1, Chairman: FLORIAN JURECKA			
10:00	Begrüßung/Welcome FLORIAN JURECKA — Dassault Systèmes SIMULIA			10:00
10:15	SIMULIA Executive Summary DIMPLE SHAH — Dassault Systèmes SIMULIA			10:15
10:45	Delivering Innovative Simulation Technology on the 3DEXPERIENCE Platform GREGOR JUDEX — Dassault Systèmes SIMULIA			10:45
11:30	Keynote: 20 Jahre mit Abaqus — aus der Trickkiste eines Anwenders MARTIN BÄKER — Technische Universität Braunschweig, Institut für Werkstoffe			11:30
12:00	Mitagessen & Fachaussstellung/Lunch & Exhibition			12:00
	Saal/Room Burj Kalifa Chairman: NICOLAI GERZEN	Saal/Room One World 1 Chairman: KAI SCHEIBA	Saal/Room One World 2 Chairman: MIHAL BEBEROGLU	
	Optimierung, Additive Fertigung/ Optimization, Additive Manufacturing	Aussteller/Exhibitors	Kopplung/Coupling & Life Science	
13:15	Ansätze zur Verbesserung der Topologie- optimierung im Leichtbau für Additive Fertigungsverfahren ANDREAS PLOTZITZA — Hochschule Aalen	Simpleware and Abaqus: Connecting 3D Image Data With Simulation REBECCA BRYAN — Synopsys, Inc.	Optimized Equipment Design using the EDEM-Abaqus Coupling DAVID CURRY — EDEM Solutions Ltd.	13:15
13:45	Comparison of Structural Topology, Shape and Sizing Optimization of an Aircraft Fuselage Soor Surround OLAF AMBOZKIEWICZ — TU Hamburg	Industry 4.0 — Cloud 3.0 — A Driver for Agility and Innovation Without Limitations of Local Resources WOLFGANG DREYER — Rescale, Inc.	Akustische Evaluierung von Elektrischen Antrieben mit ABAQUS und MNOIS WALTER HINTERBERGER — Engineering Center Steyr GmbH & Co KG	13:45
14:15	Entwicklung einer Effizienten Methode zur Gestaltoptimierung am Beispiel von Fahrwerkskomponenten DAVID FRANKE — ISKO engineers AG	Improved 3D Process Simulation of Fiber Reinforced Materials – Short Fiber, Long Fiber and Fabrics TOBIAS SCHÄFER — SimpaTec GmbH	Mechanische Analyse von Residualläsi- onen eines Kariös Veränderten Backen- zahns durch die Finite-Elemente Methode DOMINIQUE WEIMANN — Technische Univer- sität Berlin	14:15
14:45	Pause & Fachaussstellung/Break & Exhibition			14:45
	Saal/Room Burj Kalifa — General Session 2, Chairman: MATTHIAS AUER			
15:15	CST — Electromagnetic Simulation in the Automotive Industry MATTHIAS TRÖSCHER — Dassault Systèmes SIMULIA			15:15
15:45	Technology Update 1 — The Expanding Scope of Simulation with Standalone Products FRANK GOETZ — Dassault Systèmes SIMULIA			15:45
	Saal/Room Burj Kalifa, Chairman: ANDREAS FRANCK		Saal/Room One World 1, Chairman: EURIEL MALPIECE	
	NVH		CFD	
16:30	Vibro-Akustik (New Technology from wave6) STEPHANE CARO — Dassault Systèmes SIMULIA		Major Advances in CFD Simulation DAVID HOLMAN — Dassault Systèmes SIMULIA	16:30
17:00	Ende erster Tag — Fachaustellung/End of First Day — Exhibition			17:00
	Braunschweig			
18:30	Stadtführung in Braunschweig/Guided Tour through Brunswick			18:30
19:30	Abendveranstaltung/Evening Event			19:30

9. NOVEMBER — DEUTSCHES ANWENDERTREFFEN/GERMAN RUM

	Saal/Room Burj Kalifa — General Session 3, Chairman: MATTHIAS FRIEDRICH			
09:00	Begrüßung MATTHIAS FRIEDRICH — Dassault Systèmes SIMULIA			09:00
09:10	Technology Update 2 — Abaqus Solvers (STD & XPL) THOMAS EMMEL — Dassault Systèmes SIMULIA			09:10
09:40	An Efficient, Scalable AM Process Simulation Solution for Part Distortions and Residual Stresses ANDERS WINKLER — Dassault Systèmes SIMULIA			09:40
10:10	Pause & Fachausstellung/Break & Exhibition			10:10
	Saal/Room Burj Kalifa, Chairman: RAINER TWICKLER	Saal/Room One World 1 Chairman: STEFANIE SCHIFFER	Saal/Room One World 2 Chairman: REINHOLD HIRSCHAUER	
	3DEXPERIENCE & Sponsorvorträge	Material	Automotive	
10:40	Virtual Product Development CAx by the Introduction of 3DEXPERIENCE @ BU Hydraulic Brake Systems ULRICH UNGETHÜM & DIRK RECKWERTH — Continental Teves AG & Co. oHG	Simulation von Verdichtungs Vorgängen granularer Materialien — Möglichkeiten und Grenzen der FEM HOLGER PANKRATH, ROSA ELENA OCANA ATENCIO — HTWK Leipzig, Fakultät Bauwesen	How to Improve Performance of Abaqus/Explicit Models BASTIAN NÄSER — BMW Group	10:40
11:10	Umformen von Plexiglas — eine Studie MARTIN HERRMANN — SynOpt GmbH	Erweitertes MORPH-Modell für Zeit- und Temperatureffekte und dessen Anwendbarkeit in Bauteilsimulationen MONIKA GILLE — Universität Hannover, Deutsches Institut für Kautschuk-technologie e.V	Optimierung von Elektrisch Beheizten Katalysatoren durch Simulation OLAF WITTE-MERL — Continental Emitec GmbH, Business Unit Fuel & Exhaust Management	11:10
11:40	Kundenbetreuung für Simulations-Anwender — Rückblick eines Resellers auf das Jahr 2017 RALF PASSMANN — Technia Transcat GmbH	Using Rate Dependent Material Properties in a Drop Simulation of Partly Liquid Filled and Sealed Plastic Containers OSWALD VALTINER — ALPLA Werke Alwin Lehner GmbH & Co KG	Simulationsgetriebene Entwicklung am Beispiel eines Hitzeschilds ANDREAS SEIDEL — Wölfel Engineering GmbH & Co. KG	11:40
12:10	Mitagessen & Fachausstellung/Lunch & Exhibition			12:10
	Saal/Room Burj Kalifa Chairman: RALF MEYER	Saal/Room One World 1 Chairman: MICHAEL BÖHM	Saal/Room One World 2 Chairman: CARSTEN GERDES-GÖTZ	
	Composites	Verschiedenes/Miscellaneous	Wind Energy & Co-Simulation	
13:15	Numerical Risk Assessment of High-Velocity Impact on a Composite Aircraft Structure TIM WAGNER — Airbus Central R&T, Materials X Germany	Entwicklung einer Effizienten Modellierungsmethode zur Bestimmung von Kräften in Hertzschen Kontakten von Profilschienenführungen JOHANNES EISWIRTH — Festo AG & Co. KG	Simulative Charakterisierung einer Bogenzahnkupplung in einem 4 MW Windenergieanlagen Systemprüfstand STEFAN KOCK — RWTH Aachen, Chair for Wind Power Drive	13:15
13:45	Implicit and Explicit FE Analyses of Creasing Processes for Paperboard Laminated Composites NAZARINEZHAD GIASHI — SIG Combibloc Systems GmbH	The Convergence Quartet — Simulation Success in a Nutshell AXEL REICHERT — Dassault Systèmes SIMULIA	Einfluss des Finite-Element-Lagermodells auf das Lastübertragungsverhalten von Wälzlager am Beispiel einer Multimegawatt-Windturbine FABRICE NEUMANN — HS für Technik und Wirtschaft des Saarlandes	13:45
14:15		New Sizing Functionalities using SIMULIA Tosca Structure and SIMULIA Abaqus NIKOLAI GERZEN — Dassault Systèmes SIMULIA	Abaqus FSI Co-Simulation am Beispiel einer Pneumatischen Rückschlagmanschette ARZU AVCI — Festo AG & Co. KG	14:15
	Saal/Room Burj Kalifa, Chairman: FLORIAN JURECKA			
14:45	Schlussdiskussion/Q&A/Closing Remarks			14:45
15:00	Tagungsende Deutsches Anwendertreffen/End of GER RUM			15:00
15:00	Spezialseminare			15:00

10. NOVEMBER — DURABILITY USER GROUP MEETING

08:00	Doors Open & Registration				08:00
	Room Burj Kalifa — Session 1, Chairman: PAWEŁ SOBCZAK				
08:30	Welcome STEPHANIE BAILEY-WOOD — Dassault Systèmes SIMULIA				08:30
08:35	Executive Summary DIMPLE SHAH — Dassault Systèmes SIMULIA				08:35
08:55	Keynote: Fatigue Verification Procedures for Welded Joints & Components: An Overview of Recent Developments PROFESSOR ADOLF HOBACHER — Professor Emeritus, Jade University				08:55
09:55	Prediction of Weld Life With Structural Stress Approach for Automotive Axle Components Using Verity in fe-safe PAWEŁ SOBCZAK — Dassault Systèmes SIMULIA on behalf of ANOOV VASU — Senior Analytical Engineer, American Axle and Manufacturing				09:55
10:25	Break & Exhibition				10:25
	Room Burj Kalifa — Session 2, Chairman: PAWEŁ SOBCZAK				
10:45	fe-safe Technology Update GIOVANNI DE MORAIS — Dassault Systèmes SIMULIA; WILL MARS — CEO, Endurica LLC				10:45
11:35	Using fe-safe to Predict Engine Crankcase Durability ROD GILES — Lead CAE & CAD, Royal Enfield, Eicher Motors Ltd				11:35
12:05	Automated Durability Analysis of Flexible Multibody Simulation Models using Abaqus, Simpack, Isight and fe-safe COLIN SCHWARZ — Dassault Systèmes SIMULIA				12:05
12:40	Lunch & Exhibition				12:40
	Room Burj Kalifa — Session 3, Chairman: PAWEŁ SOBCZAK				
13:40	Critical Plane Selection under Non-Relaxing Simple Tension with Strain Crystallization in Natural Rubber WILL MARS — CEO, Endurica LLC on behalf of Caterpillar Inc.				13:40
14:10	Deep Dive 1: FKM Guidelines: A New Compliance Algorithm in fe-safe PAWEŁ SOBCZAK — Dassault Systèmes SIMULIA	Deep Dive 2: Essential Random Vibration Fatigue for Structural Dynamic Applications GIOVANNI DE MORAIS — Dassault Systèmes SIMULIA	Deep Dive 3: Simplified Weld Modeling with the Verity Structural Stress Method LOUIS VALLANCE — Dassault Systèmes SIMULIA	Deep Dive 4: The Assessment of Notched Components using the Critical Distance Method in fe-safe GIOVANNI DE MORAIS — Dassault Systèmes SIMULIA	14:10
15:30	Break & Exhibition				15:30
15:50	Examples of fe-safe Applications for Durability Estimation of Suspension Parts Based on Road Load Data TOMASZ ŁUKASIK — CAE Supervisor, Tenneco Automotive Eastern Europa; SZYMON ŻYMEŁKA — CAE Engineer, Tenneco Automotive Eastern Europa				15:50
16:20	Estimating Fatigue Life for Additive Manufactured Parts PAWEŁ SOBCZAK — Dassault Systèmes SIMULIA				16:20
17:00	Durability Assessment Showcase of a High Pressure Pipe Component Using Advanced Simulation Technology THOMAS EMMEL — Dassault Systèmes SIMULIA				17:00
17:30	End of Durability UGM				17:30

Lineare Dynamik & Akustik mit Abaqus/Standard Eine Effiziente Lösung von Schwingungsproblemen

Die Simulation der linearen Dynamik und Akustik ist heutzutage in vielen Industriezweigen der Standard um einerseits den Anwenderkomfort, die Produkteffizienz und die Lebensdauer zu steigern und andererseits die vom Konsumenten wahrgenommene Produktqualität zu verbessern. Dieser Kurs gibt einen Einblick in die Algorithmen und Methoden mit denen linear-dynamische Problemstellungen mit Abaqus/Standard gelöst werden können. Zusätzlich wird ein Augenmerk auf Simulationsmethoden zur Akustik und Geräuscentwicklung gelegt. Es wird gezeigt, wie gezielt Eigenmoden in ausgewählten Anregungsfrequenzbereichen extrahiert werden. Dabei wird darauf geachtet, dass genügend Eigenwerte und -moden extrahiert werden, um die Strukturantwort ausreichend zu beschreiben. Die extrahierten Eigenmoden werden anschließend in transienten, harmonischen, Antwortspektren- oder Zufallsantwortanalysen weiterverarbeitet. Weiterhin werden die Anregung mehrerer unabhängiger Fußpunkte sowie die Verwendung von Dämpfung in linearen Problemen für Struktur- und Volumenkörper in Verbindung mit internen oder externen akustischen Medien vorgestellt.

Die Reise zur Konvergenz ...

Besuchen Sie dieses Spezialseminar um Tips und Tricks kennenzulernen wie Sie Ihre Modelle mit einfachen Mitteln lauffähig bekommen. Sie erhalten hilfreiche Informationen in Bezug auf Kontakt und der Findung von Konvergenz bei nichtlinearen Problemen mit Abaqus/Standard. Die Simulation hochgradig nichtlinearer Phänomene erfordert gelegentlich die Anwendung besonderer Modellierungstechniken. Anhand von praktischen Beispielen werden in diesem Seminar typische Modelle, bei denen Kontakt- und Konvergenzprobleme zu erwarten sind, vorgestellt und Lösungsmöglichkeiten aufgezeigt.

Folgende Themen werden behandelt:

- Allgemeiner Kontakt vs. Kontaktpaare und Kontakteigenschaften
- Konvergenzkriterien zur Lösung komplexer nichtlinearer Analysen
- Entwicklung von Abaqus Modellen ohne Konvergenzschwierigkeiten
- Identifizierung von Modellierungsfehlern
- Erkennen schlecht konditionierter Analysen

Workshop: 'Getting Started with fe-safe'

Dieser halbtägige Workshop richtet sich an Anwender, die das SIMULIA Produkt fe-safe zur Lebensdauerberechnung kennenlernen wollen. Es wird vermittelt, wie Sie fe-safe in Ihren Designprozess integrieren können. Bei diesem Workshop handelt es sich um eine gekürzte Version des zweitägigen Trainings 'Einführung in fe-safe'. Es kann nicht als Ersatz des vollständigen Trainings gesehen werden. Dieser Workshop ist kostenlos, wenn er in Verbindung mit dem Anwendertreffen zu Lebensdaueranalysen am 10. November gebucht wird. Der Workshop wird in englischer Sprache gehalten.

Agenda:

- Einführung in die Lebensdaueranalysen/Ermüdung
 - Spannungs- und Dehnungsbasierte Ermüdung
 - Multiaxiale Ermüdung
- Einführung in fe-safe
 - GUI
 - Typische Problemkonfiguration
 - Dauerfestigkeitslasten
 - Materialdatenbasis
- Zusammenwirken mit der FEA
- Live Demo
 - Set Up, Analyse and Ergebnisvisualisierung
- SIMULIA Power of the Portfolio Workflow Demo:
Eine Demonstration wie fe-safe zusammen mit Abaqus, Isight und Tosca für eine optimale LebensdauerAuslegung Ihrer Produkte zum Einsatz kommen kann.

Linear Dynamics and Acoustic with Abaqus/Standard An Effective Solution for Structural Vibration Problems

Linear dynamics and acoustics simulation has become standard practice in many industries to increase user comfort, increase product efficiency, decrease fatigue, and improve the overall experience with engineering products by consumers. This course introduces the user to the algorithms and methods used to study linear dynamic problems with Abaqus/Standard. Additional attention will be devoted to acoustics simulation and noise. In this course, attendees will learn how to extract eigenmodes about a certain frequency, maximize the convergence rate during eigenvalue extraction, determine whether the number of extracted eigenmodes is sufficient to represent the structure's response adequately, perform transient, steady-state, response spectrum and random response analyses using the eigenmodes, use multiple base motions, and apply damping in linear problems for structures and solids, including internal and external acoustics.

The Journey to Convergence ...

Obtaining converged solutions for highly nonlinear simulations can sometimes be challenging. Difficulties can arise, especially in simulations involving contact, complicated material models and geometrically unstable behavior. Many years of practical experience in understanding and resolving convergence issues have been condensed into this course.

Upon completion of this course you will be able to:

- Understand how nonlinear problems are solved in Abaqus
- Develop Abaqus models that will converge
- Identify modeling errors that cause models to experience convergence difficulties
- Recognize when a problem is too difficult or too illposed to be solved effectively

Workshop: 'Getting Started with fe-safe'

This half day Workshop is aimed at new fe-safe users, soon-to-be users and any FE analysts who would like to better understand how fe-safe fits into the design process. It is a pre-cursor to the full 2-day 'Introduction to fe-safe' training class and should not be seen as a replacement for the full training class. The workshop language is English.

Agenda:

- Introduction to Fatigue
 - Stress-based Fatigue
 - Strain-based Fatigue
 - Multiaxial Fatigue
- Introduction to fe-safe
 - GUI
 - Typical Problem Configuration
 - Fatigue Loadings
 - Material Database
 - Interoperability with FEA
- Live Demo
 - Including set up, analysis and viewing results
- SIMULIA Power of the Portfolio Workflow Demo, demonstrating how using fe-safe alongside Abaqus, Isight and Tosca can ensure that your designs are truly optimized for durability

BEGLEITENDE FACHAUSSTELLUNG/EXHIBITION

Gold-Sponsoring:

- SynOpt GmbH
- TechniaTranscat GmbH

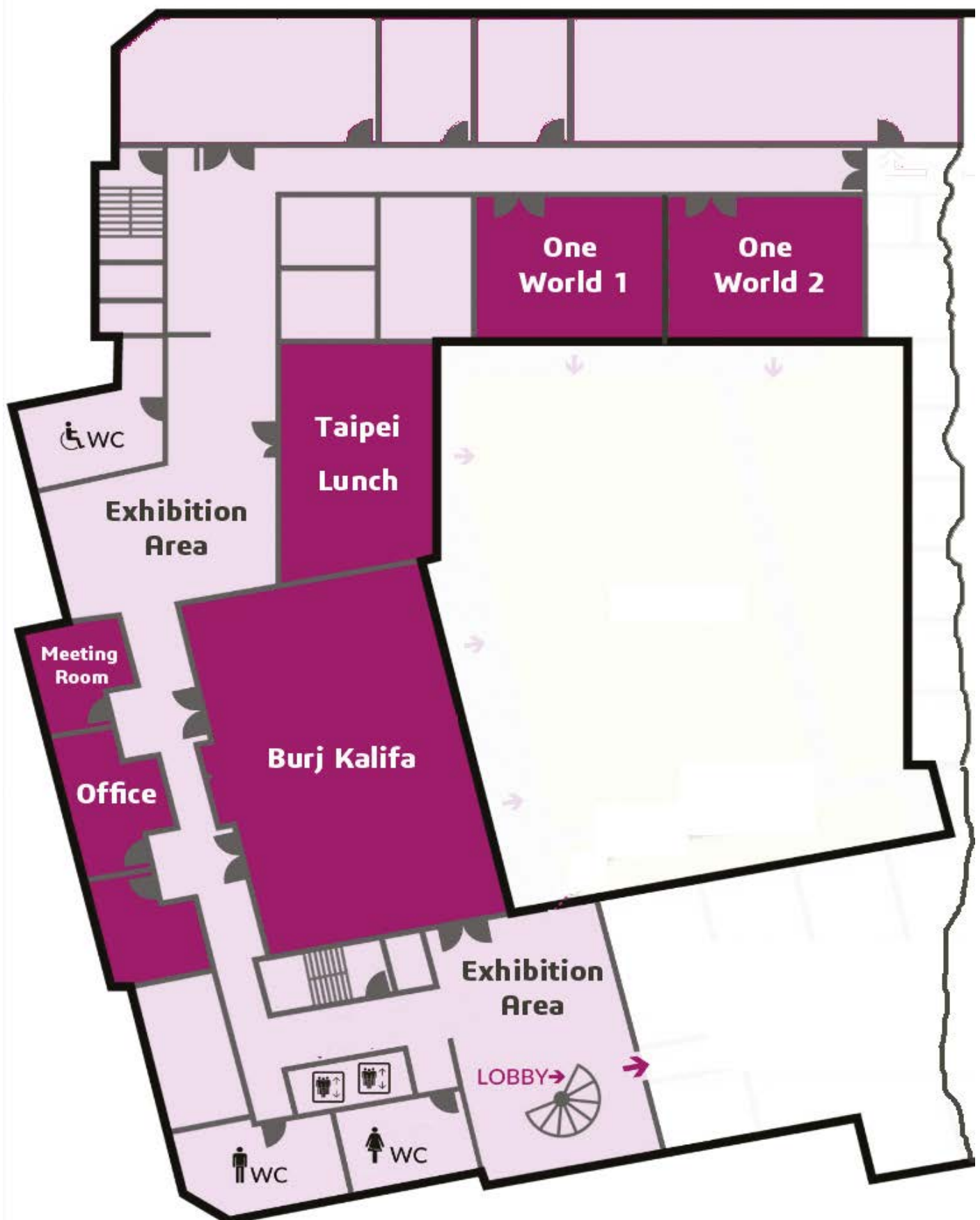


Aussteller/Exhibitors:

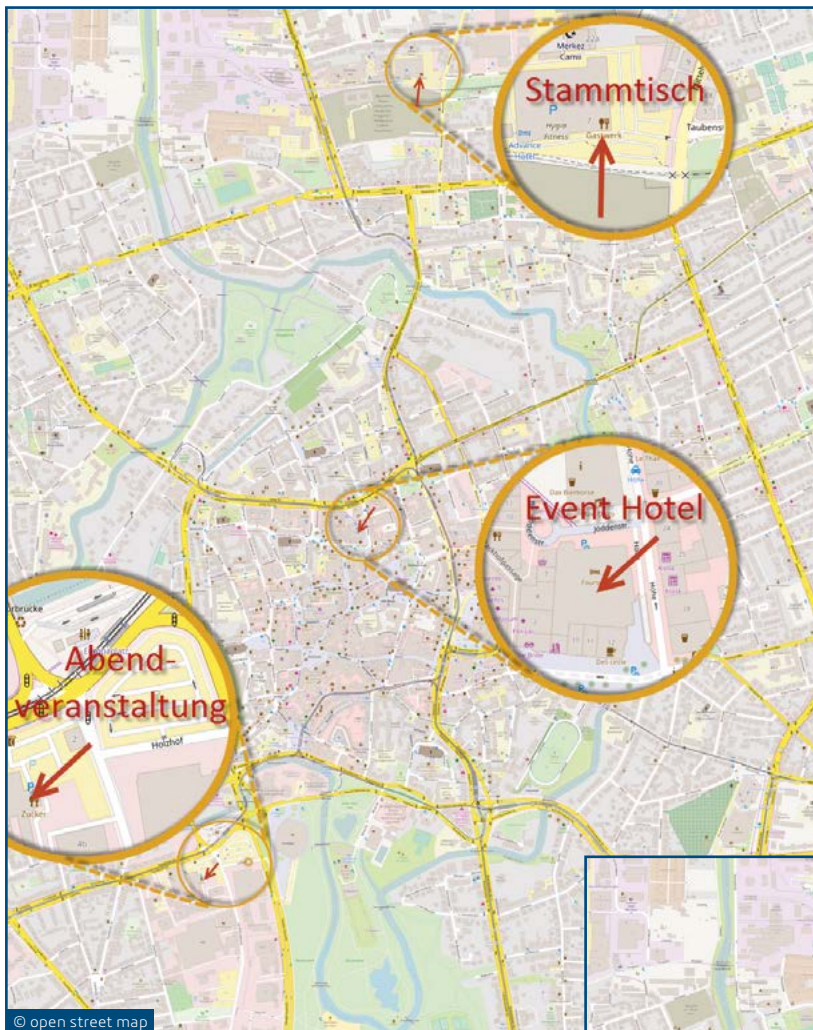
- EDEM
- Endurica LLC
- Engineering Center Steyr GmbH & Co. KG
- LASSO Ingenieurgesellschaft mbH
- GNS mbH
- Rescale
- SimpaTec GmbH
- Synopsis Northern Europe Limited
- Wölfel Engineering GmbH & Co. KG
- 3DConnexion GmbH



TAGUNGSPLAN/EVENT PLAN



STRASSENPLAN & ADRESSEN/MAP & EVENT ADRESSES



EVENT HOTEL:

FourSide Hotel

Jöddenstr. 3,
38100 Braunschweig
Tel: + 49 (531) 70 72 00
Fax: + 49 (531) 70 72 07 00
Email: braunschweig@fourside-hotels.com

STAMMTISCH/REGULARS TABLE:

Gastwerk

Mittelweg 7
38106 Braunschweig

Dienstag/Tuesday, 07.10.2017:
19:00 -23:00 Uhr/o'clock

TREFFPUNKT STADFÜHRUNG/ MEETING POINT FOR GUIDED TOUR:

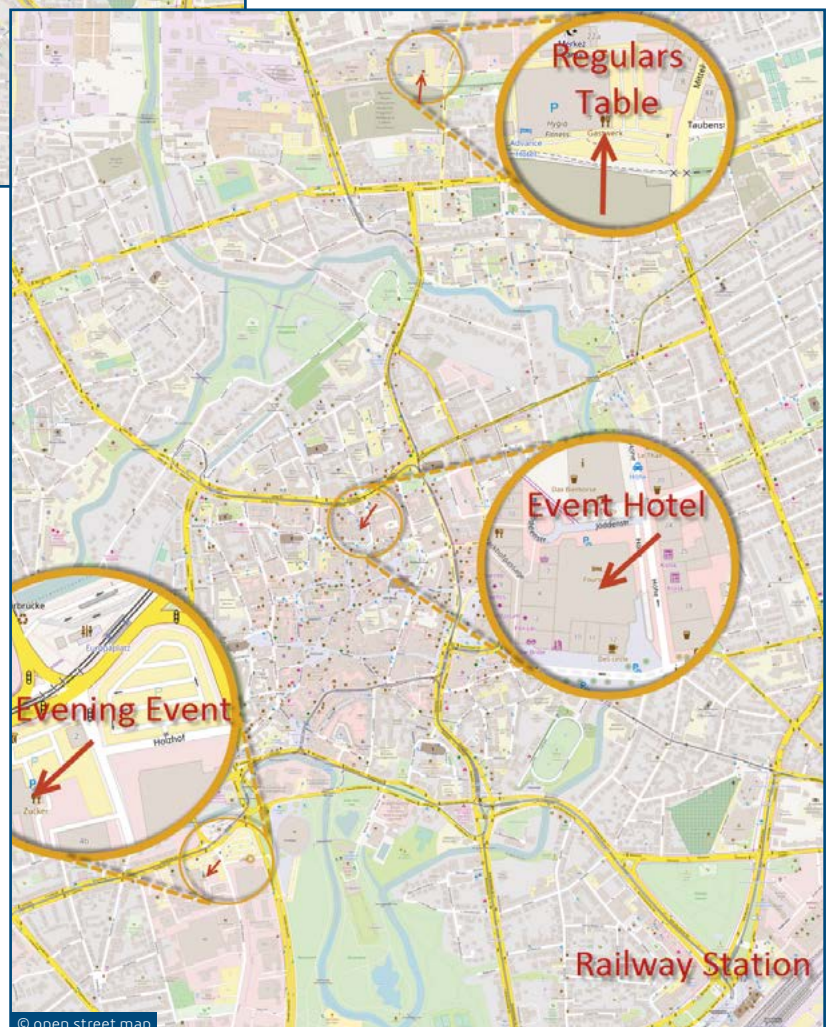
vor dem/in front of
FourSide Hotel
Jöddenstr. 3,
38100 Braunschweig

Mittwoch/Wednesday, 08.10.2017:
Sammeln/Assembly: 18:20 Uhr/o'clock
Start: 18:30 Uhr/o'clock

ABENDVERANSTALTUNG/ EVENING EVENT:

Zucker
Frankfurter Str. 2
38122 Braunschweig

Mittwoch/Wednesday, 08.10.2017:
19:30 -00:00 Uhr/o'clock





SIMPACK MULTIBODY SIMULATION

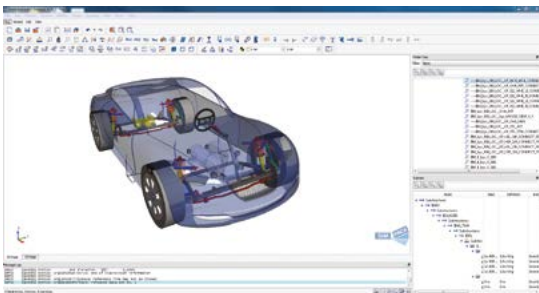
REALTIME DRIVING SIMULATOR

SIMPACK

As part of the SIMULIA brand, focused on realistic simulation, Simpack is now the strategic multibody simulation (MBS) component of the Dassault Systèmes 3DEXPERIENCE® portfolio.

Simpack is the leading MBS software for mechanical and mechatronic designs and is internationally recognized for its excellence in the sectors of Virtual Prototyping and 3D-Simulation. Simpack is used for non-linear multibody simulation and is renowned for its ability to integrate flexible bodies.

Cars, trucks, engines, rail vehicles, wind turbines and airplanes are just a few of the industrial sectors Simpack is used in.

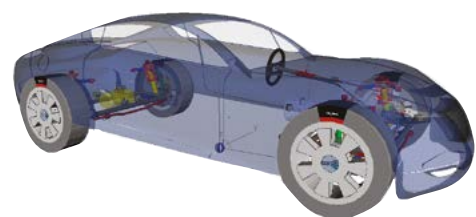


SIMPACK REALTIME

As a next step, by using Simpack Realtime, the virtual world (Simpack model) can be connected to the real world (hardware) to perform Hardware-in-the-Loop (HIL) simulations. These realtime simulations are used in various studies, from Handling/Ride Simulators to Advanced Drivers Assistance Systems.

HIGHLIGHTS

- Complete systems, including flexible bodies and detailed force elements, can be run directly in realtime
- Direct use of high-fidelity models: no model simplification needed
- Multi-core support; automatic parallelization
- Zero turnaround time
- Permits usage of non-linear frequency dependent bushings and mounts
- Multiple interfaces, e.g. dSPACE, Concurrent, Simulink®, rFpro, Steering wheels, UDP
- TMEasy, MF-Tyre, CDTire, FTire support

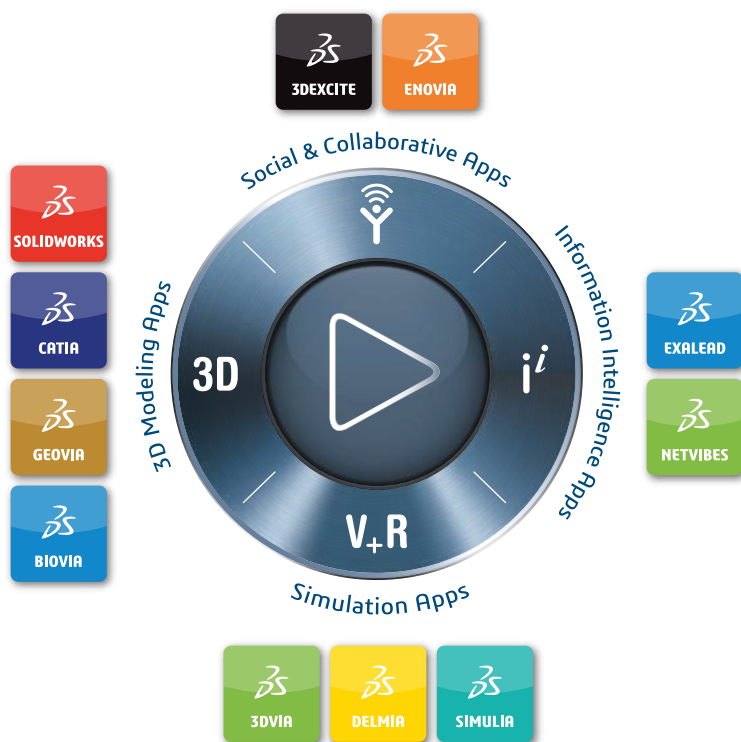


NOTES

[illegible]

NOTES

[illegible]



Our **3DEXPERIENCE®** platform powers our brand applications, serving 12 industries, and provides a rich portfolio of industry solution experiences.

Dassault Systèmes, the **3DEXPERIENCE®** Company, provides business and people with virtual universes to imagine sustainable innovations. Its world-leading solutions transform the way products are designed, produced, and supported. Dassault Systèmes' collaborative solutions foster social innovation, expanding possibilities for the virtual world to improve the real world. The group brings value to over 210,000 customers of all sizes in all industries in more than 140 countries. For more information, visit www.3ds.com.

Europe/Middle East/Africa

Dassault Systèmes
10, rue Marcel Dassault
CS 40501
78946 Vélizy-Villacoublay Cedex
France

Asia-Pacific

Dassault Systèmes K.K.
ThinkPark Tower
2-1-1 Osaki, Shinagawa-ku,
Tokyo 141-6020
Japan

Americas

Dassault Systèmes
175 Wyman Street
Waltham, Massachusetts
02451-1223
USA

DASSAULT SYSTEMES | The **3DEXPERIENCE®** Company