Automotive CAE Grand Challenge 2010

The conference **automotive CAE Grand Challenge** - held in March 2009 for the first time – has been a great success. The reactions of the participants, the speakers and the exhibitors have been very positive. Especially the novel concept – focusing on a few selected Challenges of automotive CAE – was highly appreciated. This stimulated carhs.training to conduct the 2nd automotive CAE Grand Challenge on the 30th and 31st of March 2010 in Hanau (Germany).

Motivation for the conference: In the past decades computer simulation has become an indispensable tool in automotive development. Advances in applied mechanics, numerical methods and computer technology today permit the simulation of complex phenomena of automotive engineering and allow predicting the behaviour of products and processes before physical prototypes are built.

Computer simulation today covers almost all aspects of product and process design, like aerodynamics, crashworthiness or manufacturability. The capabilities of current simulation methods in many cases render precise quantitative predictions of the performance of products and processes. In those cases in which this is not possible, simulation will at least allow the evaluation of design alternatives.

Despite the progress in simulation technology and impressive results in industrial application a number of problems remain unsolved today. This prevents more exact and reliable predictions and limits the further replacement of physical tests by "100% virtual prototyping" in automotive development. These problems include the prediction of material failure, the description of advanced materials and airbag unfolding as well as more practical issues like engineering process and simulation data management. We call these problems Grand Challenges!

Objective of the Conference: carhs.training wants to help overcome these challenges and contribute to the improvement of simulation methods for automotive development by organizing the "automotive CAE Grand Challenge". It is the objective of this conference to motivate basic research and software development to advance computer simulation in automotive development by solving the "Grand Challenges".

Conference Concept and Topics: Through a survey recently performed among simulation experts of the automotive industry carhs.training has identified the Grand Challenges for 2010:

- Durability & Fatigue of Composite Materials
- Robustness of Simulation Models
- Airbag Simulation for Out of Position Load Cases
- Multi Trade Simulation (e.g. Stamp/Crash, Casting/Durability)
- Material Models of Plastics in Crash Simulation
- Multi Disciplinary Optimization

In the conference a session will be dedicated to each "Grand Challenge". In each session a simulation expert from the automotive industry will first explain the technical and economical importance of the individual challenge. Next a researcher will explain the state of research on the subject. This will be followed by presentations from the software companies involved in the discipline on their efforts to solve the individual challenge.

Register now at
www.carhs.de/grand-challenge

Registration Fax +49-6023-964070

☐ Yes, I will attend the Automotive CAE Grand Challenge 2010 on March 30+31, 2010. The registration fee is **EUR 500,-** (until March 2, 2010, thereafter EUR 550,-). I accept the terms & conditions of carhs.training gmbh.

SURNAME, NAME:

DEPARTMENT:

PHONE:

eMAIL:

COMPANY:

POSTCODE / CITY:

ADDRESS:

INVOICE TO:

DATE/ SIGNATURE:

Terms & Conditions

VAT will be added to the registration fee if applicable. The conference fee includes detailed conference proceedings, lunches and refreshments, the evening reception. The registration fee is due 10 days after invoicing. Free cancellation is possible until March 2, 2010. Participants who cancel between March 3, 2010 and March 16, 2010 are liable for 50% of the registration fee. Participants who cancel after March 16, 2010 , or who do not attend, are liable for the entire registration fee. The number of participants is limited. carhs.training gmbh reserves the right to vary or cancel the event in the light of bookings and to vary the duration and content without prior notice. In the event of cancellation, carhs.training gmbh will refund all monies paid to carhs.training gmbh with respect to the event. The program is subject to change without notice.

Universities and public research institutes receive a 40% discount on the registration fees.

This event is organized by
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Congress Venue:
Congress Park Hanau
Schlossplatz 1
63450 Hanau, GERMANY
www.cph-hanau.de

FINAL PROGRAM & REGISTRATION

Congress Park Hanau, Germany
March 30+31, 2010

Final Conference Program

automotive CAE GRAND CHALLENGE 2010

March 30, 2010 - 9 a.m.-5:30 p.m.

Challenge 1: Durability & Fatigue of Composite Materials

Industry Requirements
- Dr. Tayeb Zeguer - Jaguar Landrover, Dr. Dirk Ulrich - carhs

Research State of the Art
- Dominik Laveuve, Katrin Jaschek - Fraunhofer-LBF

Software Solutions
- Helmut Dannbauer - Magna Powertrain ECS
- Dr. Jens Marsolek - Dassault Systèmes Simulia

Challenge 2: Robustness of Simulation Models

Industry Requirements
- Richard Brown - Jaguar Landrover

Research State of the Art
- Dr. Tanja Clees, Clemens-August Thole - Fraunhofer SCAI

Software Solutions
- Dr. Heiner Müllerschön - DYNAmore
- Dr. Stylianos Seitanis - Beta CAE Systems
- Jean Michel Terrier, Marian Bulla - Altair Engineering
- Dr. Johannes Will - Dynardo

Challenge 3: Airbag Simulation for Out of Position Load Cases

Industry Requirements
- Dr. Erich-Walter Blümcke - Audi

Research State of the Art
- Dr. Jörg Kuhnert - Fraunhofer IWTM

Software Solutions
- Jutta Schlosser - ESI Group
- Sebastian Stahlschmidt, Dr. Ulrich Franz - DYNAmore
- Jean Michel Terrier, Marian Bulla - Altair Engineering

Round table

Challenge 4: Multi Trade Simulation

Industry Requirements
- Dr. Robert Schilling, Dr. Ulrich Weiss - Ford

Research State of the Art
- Dr. Daniel Watzenig, Dr. Eric Armengaud, Dr. Hannes Stippel - Virtual Vehicle

Challenge 5: Material Models of Plastics for Crash Simulation

Industry Requirements
- Markus Franzen, Dr. Horst Lanzerath, Dr. Robert Schilling - Ford

Research State of the Art
- Prof. Dr. Stefan Kolling - FH-Gießen, Dr. Florian Becker - DKI, Julian Schöpfer - Daimler

Evening Reception and Dinner

March 31, 2010 - 8:30 a.m.-5 p.m.

Software Solutions
- Dr. Achim Egner-Walter - MAGMA Gießereitechnologie
- Dr. Helmut Gese - MATFEM
- Dr. Christian Klimmek - SimuForm GmbH
- Nick Tzannetakis - LMS
- Klaus Wolf - Fraunhofer SCAI

Software Solutions
- Dr. André Haufe - DYNAmore
- Francesco Linares - EnginSoft
- Hubert Lobo, DatapointLabs
- Gernot Oberhofer - MATFEM
- Prof. Dr. Thomas Pyttel, Dr. Charles Thibaud, Andre Berger - ESI

Challenge 6: Multi Disciplinary Optimization

Industry Requirements
- Prof. Dr. Lothar Harzheim - Opel

Research State of the Art
- Prof. Dr. Axel Schumacher - HAW Hamburg

Software Solutions
- Stefan Braun - SmartCAE
- George Korbetis - Beta CAE Systems
- Damaso Lopez - Tecosim
- Marcel Mombartz - Dassault Systèmes Simulia
- Dr. Johannes Will - Dynardo

The automotive CAE Grand Challenge 2010 -
The event in automotive CAE you should not miss:

- **Learn all about the important challenges of automotive CAE**
- **The only CAE conference for which the conference topics are determined by a survey among the stakeholders of automotive CAE**
- **Hear all about the efforts in research and software development to overcome the challenges of automotive CAE**
- **Meet and exchange with researchers, software developers and industrial users of automotive CAE during the conference, in the exhibition and at the evening reception**

Conference venue
Congress Park Hanau
Schlosspatz 1
63450 Hanau, GERMANY
www.cph-hanau.de

Gold Sponsors:

Silver Sponsors:

The conference language is English.

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