

# Day 1: Thursday 24th October 2013

Defining new boundaries

## Hamburg 2013

Open Source CFD International Conference

### 10:00 - 11:00 Registrations & Refreshments | Exhibition

### 11:00 - 12:55 Session I

- 11:00 - 11:10 **Welcome by Event Organisers ICON**  
S. Weston  
ICON Ltd., UK
- 11:10 - 11:45 **INVITED INDUSTRIAL KEYNOTE SPEAKER**  
**Hypercar Development in Hyperspeed**  
J. Gunner  
Koenigsegg Automotive AB, Sweden
- 11:45 - 12:20 **INVITED ACADEMIC KEYNOTE SPEAKER**  
**The Agony and the Ecstasy of using OpenFOAM® for CFD Research**  
E. Paterson  
Virginia Tech, USA
- 12:20 - 12:55 **INVITED SPEAKER**  
**The Application of Spray Models for Advanced Combustion System Development**  
R. Grover  
General Motors, USA

### 12:55 - 14:00 Buffet Lunch Break | Exhibition

### 14:00 - 15:40 Session II

- 14:00 - 14:25 **Implementation and Stabilisation of the Adjoint Flow Model with Adjoint k-epsilon Turbulence and Adjoint Wall Functions in OpenFOAM®**  
H. Jasak\*\*, N. Lisjak\*\*  
\*Wikki Ltd, UK; \*\*University of Zagreb, Croatia
- 14:25 - 14:50 **Producing Generic Advice on Indoor Dispersion Using Automated CFD Processing**  
T. Foat, S. Harrison, J. Nally, S. Parker, S. Parry  
Dstl, UK
- 14:50 - 15:15 **Retopologisation as an Answer to the Problem of Mesh Motion for Large Deformations**  
W. Wambold  
Volkswagen AG, Germany
- 15:15 - 15:40 **iconCFD 3.0 – A Modular Approach to Supporting Business with CFD**  
J. Papper, et al.  
ICON Ltd., UK

### 15:40 - 16:05 Poster Presentations

### 16:05 - 16:35 Discussion Break & Refreshments | Exhibition

### 16:35 - 17:50 Session III

- 16:35 - 17:00 **Aerodynamic Simulation in the Development of a WRC Rally Car**  
H. Dechipre  
Volkswagen Motorsport GmbH, Germany
- 17:00 - 17:25 **Analysis for Drift Control of Supplied Material in Blast Furnace Using DEM in OpenFOAM®**  
N. Kurata  
IHI Corporation, Japan
- 17:25 - 17:50 **PLATINUM SPONSOR FEATURE PRESENTATION**  
**Industrialising Expertise: Directions to Increase HPC Scale and Access**  
P. Lagier\*, U. Becker-Lemgau\*\*  
\*Fujitsu Systems Europe, France; \*\*Intel GmbH, Germany

### 19:30 - 23:00 Evening Entertainment

- 19:30 - 20:30 **Pre-dinner Drinks**
- 20:30 - 22:00 **Evening Dinner**
- 22:00 - 24:00 **Post-dinner Drinks**

### 24:00 Close of Day 1

### Event Organiser



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### Exhibitors



### Conference Dinner - Thursday 24th October

You are cordially invited to attend the Conference Dinner being held in the Blankenese Room on the 8th floor here in the hotel.

Join us for pre-dinner drinks at 19.30hrs in the Opus Lounge on the ground floor of the hotel.

Please wear your delegate badge.

We look forward to seeing you there.

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# Day 2: Friday 25th October 2013

Defining new boundaries

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Open Source CFD International Conference

### 08:00- 08:30 Refreshments | Exhibition

#### 08:30 - 10:10 Session IV-A

08:30 - 08:55 **A Finite-Volume Solver for Two-Fluid Flow in Heterogeneous Porous Media Based on OpenFOAM®**  
O. Oxtoby, J. Heyns, R. Suliman  
Council for Scientific and Industrial Research, South Africa

08:55 - 09:20 **Hybrid Multiphase Solver Based on OpenFOAM® for Bubble Column Reactor Design**  
M. Maekawa, Z. Zhang  
Chiyoda Corporation, Japan

09:20 - 09:45 **Implementation of a Phase Field Method in OpenFOAM® for Simulation of Spreading Droplets and Verification by Test Problems**  
X. Cai, M. Wörner, O. Deutschmann  
Karlsruhe Institute of Technology, Germany

09:45 - 10:10 **CFD Modeling of Low Rate Direct Contact Condensation Phenomena in Suppression Pool by Eulerian Two-Phase Flow Approach**  
G. Patel, V. Tanskanen, R. Kyrki-Rajamäki  
Lappeenranta University of Technology, Finland

#### Session IV-B

**DrNUM: A Framework for Dual Resolution Numerics on High Performance Hardware**  
R. Vilsmeier\*, O. Gloth\*\*  
\*numrax GmbH, Germany; \*\*enGits, Germany

**Coupling DrNUM and OpenFOAM® for Efficient External Aerodynamics Simulations**  
O. Gloth  
enGits GmbH, Germany

**META Tool Suite Fluid Analysis Validation with the Wigley Hull**  
M. Myers, O. Yapar  
Vanderbilt University, USA

### 10:10 - 10:40 Discussion Break & Refreshments | Exhibition

#### 10:40 - 11:55 Session V-A

10:40 - 11:05 **GA Optimisation of CFD Models and Meshes**  
G. Tabor  
University of Exeter, UK

11:05 - 11:30 **LBMHexMesh: an OpenFOAM® Based Grid Generator for Lattice Boltzmann Method (LBM)**  
A. Pasquali, M. Schoenherr, M. Geier, M. Krafczyk  
Technische Universität Braunschweig, Germany

11:30 - 11:55 **Performance Improvement on the Algebraic Multigrid Solver in OpenFOAM®**  
A. Vasilij\*, H. Jasak\*\*  
\*University of Zagreb, Croatia; \*\*Wikki Ltd, UK

#### Session V-B

**Advancing Turbulent Combustion Modeling Using the Eddy Dissipation Concept with Detailed Chemistry**  
D.A. Lysenko\*, I.S. Ertesvåg\*, K.E. Rian\*\*  
\*Norwegian University of Science and Technology, Norway; \*\*Computational Industry Technologies AS, Norway

**Evaluating the Performance of a Rotary Vane Expander for Small Scale Organic Rankine Cycles using OpenFOAM®**  
A. Della Torre\*, G. Montenegro\*, M. Fiocco\*, A. Onorati\*, G. Schlager\*\*, C. Benatzky\*\*  
\*Politecnico di Milano, Italy; \*\*Magna Powertrain, Austria

**Charge Motion and Mixture Formation Analysis of a Direct Injection Spark Ignition Engine Using OpenFOAM®**  
K. G. Stapf  
Ingenieurbuero TWB, Germany

### 11:55 - 12:10 Short Break | Exhibition

#### 12:10 - 13:25 Session VI-A

12:10 - 12:35 **Analysis of the Power Losses in Geared Transmissions - Measurements and CFD Calculations Based on Open Source Codes**  
A. Della Torre, F. Concli, C. Gorla, G. Montenegro  
Politecnico di Milano, Italy

12:35 - 13:00 **CFD Analysis of a Single MRL Tidal Turbine**  
M. Berry, G. Tabor  
University of Exeter, UK

13:00 - 13:25 **Mapping Adjoint Sensitivities to Geometry Parameters for Shape Optimization**  
M. Saroch\*, S. Weickgenannt\*, A. Zimmer\*\*, B. Leroy\*\*  
\*Friendship Systems, Germany; \*\*ICON Ltd., UK

#### Session VI-B

**Utilization of OpenFOAM® in the Reactive Production of Polymer Composite Materials**  
J. Nagy  
Johannes Kepler University Linz, Austria

**Application-Driven Development of Open Source Simulation Technology: An Overview of DEM and CFD-DEM Models and their Applications**  
C. Goniva\*\*\*, C. Kloss\*\*, S. Pirker\*  
\*Johannes Kepler University Linz, Austria; \*\*DCS Computing GmbH, Austria

**1-D Simulation of Transient Two-Phase Flow Phenomena in Hilly-Terrain Pipeline Systems**  
G. Reiss  
ICE Strömungsforschung, Austria

### 13:25 - 14:30 Buffet Lunch Break | Exhibition

#### 14:30 - 15:45 Session VII

14:30 - 14:55 **Mesh Studies for External Aero Simulations in Automotive Applications**  
A. Iordanidis, V. Skaperdas  
BETA CAE Systems S.A., Greece

14:55 - 15:20 **A New Approach to Open CFD**  
C. Francke, Y. Li, K. Claramunt, C. Hirsch  
NUMECA International, Belgium

15:20 - 15:45 **Building Block for Automatisation: PyFoam**  
B. Gschaider  
ICE Strömungsforschung, Germany

### 16:00 Close of Event by ICON

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# Day 1: Poster Presentations

Defining new boundaries

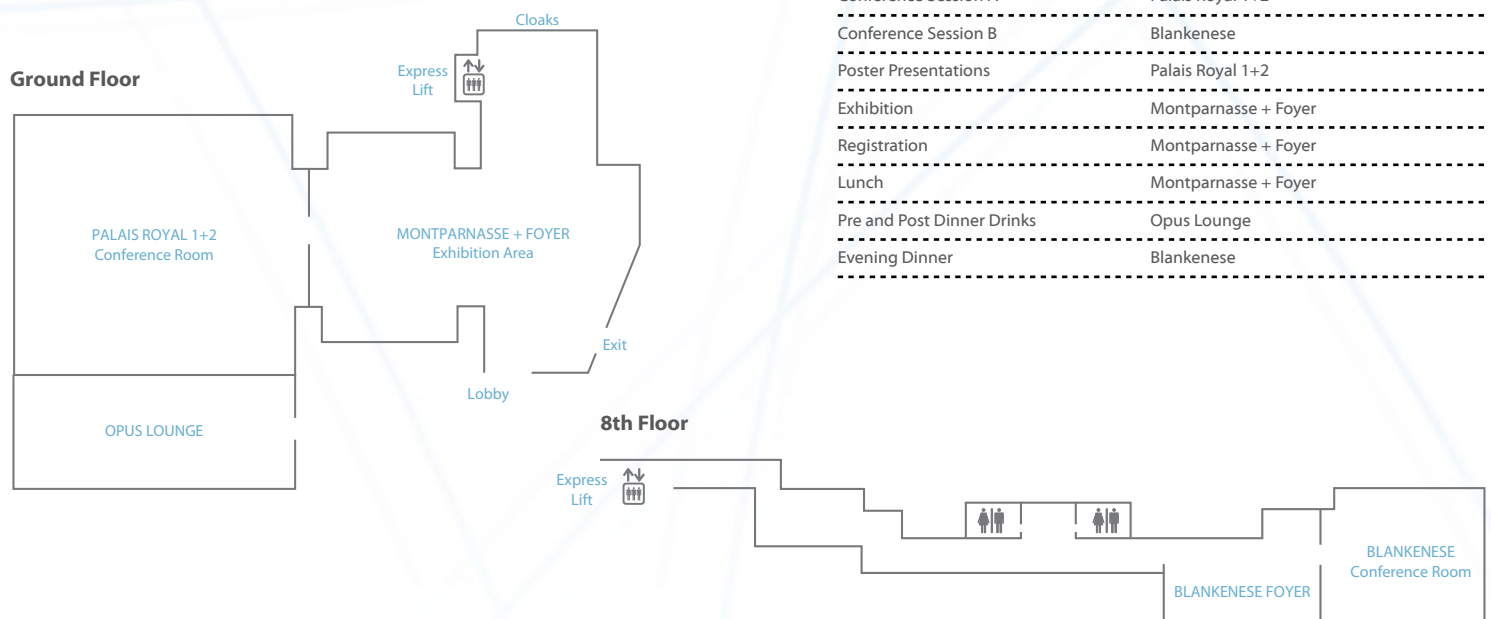
## Hamburg 2013

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### 15:40 - 16:05 Poster Presentations

1	<b>BBiped an SU2-Based Open-Source: New Multiple Rotating Frame Developments</b> A. Ramezani, L. Remaki*, J. Antolin Suarez** *BCAM-Basque center for Applied Mathematics, Spain; **BALTOGAR, Spain
2	<b>Numerical Simulation of 2D and 3D Transitional Flows through Prismatic Turbine Cascade</b> J. Fürst Czech Technical University Prague, Czech Republic
3	<b>Application of Three-Dimensional Hydrothermal Model for the Temperature Dynamics at Small and Shallow Lakes</b> A. Abbasi, N. van de Giesen Delft University of Technology, Netherlands
4	<b>HPC Realization of a Controlled Turbulent Round Jet Using OpenFOAM®</b> A. Onder, J. Meyers KU Leuven, Belgium
5	<b>Topology &amp; Shape Optimization of a EGR Duct Geometry</b> A. Zimmer**, S. Kunze*, K. Tsikouris**, B. Leroy**, M. Valentino** *MANN+HUMMEL, Germany; **ICON Ltd., UK
6	<b>Grid Resolution and Time Step Studies in the Case of URANS Simulation of a Cyclone Separator</b> A. Karvinen, H. Ahlstedt Tampere University of Technology, Finland
7	<b>Simulation of Turbulence around the Helicopter Deck of an Offshore Oil Platform</b> K. Giljarhus Lloyd's Register Consulting, Norway

### Floor Plan



### Events

### Location

Conference Session A	Palais Royal 1+2
Conference Session B	Blankenese
Poster Presentations	Palais Royal 1+2
Exhibition	Montparnasse + Foyer
Registration	Montparnasse + Foyer
Lunch	Montparnasse + Foyer
Pre and Post Dinner Drinks	Opus Lounge
Evening Dinner	Blankenese

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