

# 17th Multiphase Flow Conference & Short Course

November 11 - 15, 2019 Dresden

**HZDR**

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## 17th Multiphase Flow Conference & Short Course

**Multiphase Flows – Simulation, Experiment and Application**

11 - 15 November 2019, Dresden

### Organisation & Information

**Languages** The conference language will be English.

**Location** Helmholtz-Zentrum Dresden - Rossendorf

**Contact** [multiphase@hzdr.de](mailto:multiphase@hzdr.de)

#### Programme Highlight

A highlight of the event will be a visit of the TOPFLOW and LIMMCAST experimental facilities of HZDR.

### Short Course

Our Short Course, two days - from Monday noon until Wednesday noon, is designed to provide knowledge of the use of numerical and experimental methods for multiphase flows.

The first one and a half days of the Short Course will focus on general topics; in the morning of the third day one group will specialise on experimental techniques including laboratory practices, while the other group will learn about specific multiphase capabilities of CFX/FLUENT, STAR-CCM+ and OpenFOAM including a demonstration case setup (parallel sessions) for each code.

The numerical part will focus on finite-volume methods for Euler-Euler and Euler-Lagrange multiphase flow predictions, and on associated mathematical models. The experimental part will provide knowledge of the selection, installation and usage of modern gas-liquid measurement techniques and instruments, such as wire-mesh sensors, needle probes, process microscopy and gamma-ray computed tomography along with the application of data analysis tools.

The Short Course will address the interests of engineers, chemists, physicists and technicians active in research and design, who want to be informed about modern design methods and tools for multiphase flows.

#### Lecture Topics

- Mathematical Models for Multiphase Flows: Overview & Basic Equations
- Lagrangian Two-Phase Flow Modelling
- Eulerian Multiphase Flow Modelling: Phase Interaction Models
- Modelling of free-surface flows with focus on the VOF Method
- Dispersed Flow Modelling - Multiple-Size Group Modelling – MUSIG
- Interfacial Heat and Mass Transfer Models
- Stratified & Segregated Flow Modelling - Interfacial Area Density Model – AIAD
- Multi-Scale Modelling Techniques – GENTOP
- Flexible development framework for the Euler-Euler approach
- Measurement Techniques and Experimental Investigations of Multiphase Flows

#### Lecturers

- Georg Scheuerer, ISimQ GmbH
- Thomas Esch, ANSYS Germany
- Henning Eickenbusch, ANSYS Germany
- Milovan Peric, Siemens Industry Software GmbH
- Roland Rzehak, HZDR
- Simon Lo, Siemens PLM UK
- Thomas Höhne, HZDR
- Dirk Lucas, HZDR
- Chris Greenshields, The OpenFOAM Foundation
- Fabian Schlegel, HZDR
- Markus Braun, ANSYS Germany
- Claudio Santarelli, Siemens PLM Germany
- Felix Klippel, Siemens PLM Germany
- Eckhard Schleicher, HZDR
- Andre Bieberle, HZDR

# Conference

The conference will take place after the Short Course from Wednesday noon until Friday noon.

Multiphase flows occur in a large variety of industrial applications, for instance in the chemical and process industry, in power generation, and in the automotive industry. In order to improve the quality of these products, to accelerate their development, and to increase their safety, it is important to better understand, model, and simulate multiphase flows.

The goals of the conference are to discuss the state of the art in multiphase flow research and applications, and to foster discussion and exchange of knowledge. Experts from the experimental side, from modelling and simulation, as well as experts from the application field are invited to present their research and results to a worldwide audience.

## General topics of interest include

- Simulation technology for multiphase flows
  - Phase interaction models
  - Turbulence models
  - Solution algorithms
  - Multi-scale modelling techniques
- Application of simulation methods to multiphase flow problems
- Experimental investigations of multiphase and magnetohydrodynamic flows
- Measurement methods for multiphase and magnetohydrodynamic flows

## Call for Abstracts

Oral and poster presentations are welcome. The submission of a single-sided abstract is required before **Sep 01, 2019**. Please use the form on the website for the abstract submission. Poster awards will be granted to the best 3 posters.

## Keynote Lectures

- **DNS and Interface-capturing simulations of two-phase flows in complex geometries**  
Igor Bolotnov, North Carolina State University, Raleigh, NC, USA
- **Measurements in Dynamic Liquid Films**  
Horst-Michael Prasser, ETH Zürich, Switzerland

# Registration & Fees

## Important Dates

Deadline for abstracts      **01 Sep, 2019**  
Deadline for registration    **29 Sep, 2019**

Please consider that the number of seats is limited!

## Registration

Please register at our website:

[www.hzdr.de/multiphase](http://www.hzdr.de/multiphase)

## Contact



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## The registration fees include

- Short Course and/or Conference materials
- Transfers between hotels and HZDR
- Coffee breaks and lunches
- Short Course dinner and/or
- Conference dinner

You will receive further information on the Short Course and Conference with your confirmation letter. Possible forms of payment: credit card, invoice or bank transfer.

### Short Course, 11 - 13 November, 2019

Industrial attendees      € 520  
Academic attendees      € 325  
(registrations after Sep 29: + € 50)

### Conference, 13 - 15 November, 2019

Industrial attendees      € 275  
Academic attendees      € 175  
(registrations after Sep 29: + € 50)

### Package price for Short Course and Conference

Industrial attendees      € 635  
Academic attendees      € 405  
(registrations after Sep 29: + € 100)