

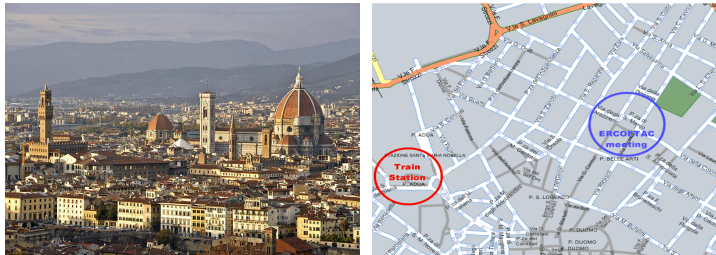
Registration

www.ercoftac.org

Location

La Sala Strozzi
Univ of Florence, Rettorato
Piazza San Marco, 4 - Florence
Italy

La Sala Strozzi is located within a walking distance from the train station in Florence. The train station can be arrived at directly from the airport.



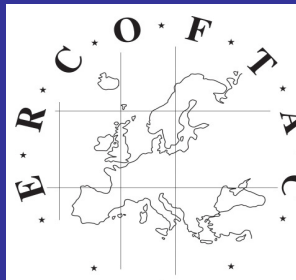
Seminar fees

€190 ERCOFTAC members
€270 Non-ERCOFTAC members

This fee includes: seminar registration, lunch and refreshments and the BPG Book. Please note that accommodation is not included in this fee.

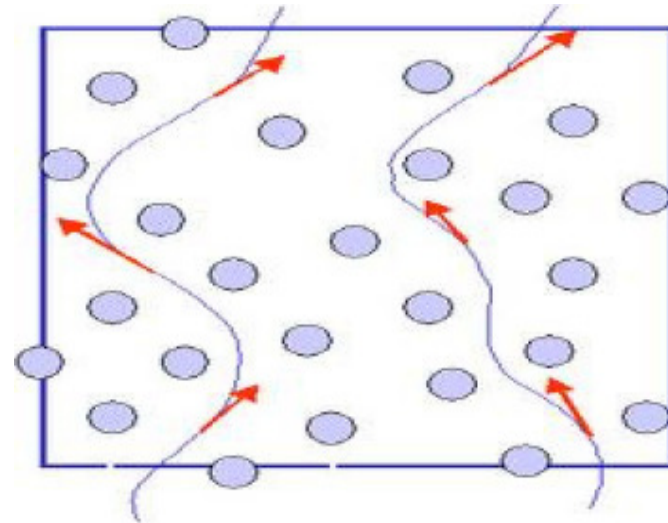
Registration

Please contact
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Best Practice Guidance Seminar
CFD of Dispersed Multi-Phase Flows

www.ercoftac.org



16th October 2009

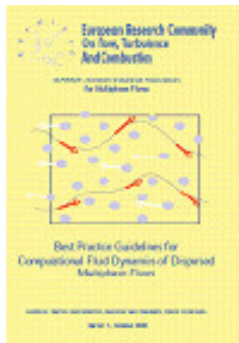
La Sala Strozzi, Univ of Florence
Italy

Information

ERCRAFTAC, a world leader in applied fluid mechanics, is proud to announce a seminar on *'CFD for Dispersed Multi-Phase Flows'* as part of the **ERCRAFTAC Best Practice Guidance Seminar Series**.

The simultaneous presence of several different phases in external or internal flows such as gas, liquid and solid is found in daily life, environment and numerous industrial processes. These types of flows are termed multiphase flows, which may exist in different forms depending on the phase distribution. Examples are gas-liquid transportation, crude oil recovery, circulating fluidized beds, sediment transport in rivers, pollutant transport in the atmosphere, cloud formation, fuel injection in engines, bubble column reactors and spray driers for food processing, to name only a few. As a result of the interaction between the different phases such flows are rather complicated and very difficult to describe theoretically. For the design and optimisation of such multiphase systems a detailed understanding of the interfacial transport phenomena is essential. For single-phase flows Computational Fluid Dynamics (CFD) has already a long history and it is nowadays standard in the development of air-planes and cars using different commercially available CFD-tools.

Due to the complex physics involved in multiphase flow the application of CFD in this area is rather young. These guidelines give a survey of the different methods being used for the numerical calculation of turbulent dispersed multiphase flows. The Best Practice Guideline (BPG) on Computational Dispersed Multiphase Flows is a follow-up of the previous ERCRAFTAC BPG for Industrial CFD and can be used in combination with it. The potential users are researchers and engineers involved in projects requiring CFD of (wall-bounded) turbulent dispersed multiphase flows with bubbles, drops or particles.



Speakers & Programme

Speakers

Prof. Martin Sommerfeld
University Halle-Wittenberg, Germany

Prof. René Oliemans,
Delft University, The Netherlands

Prof. Berend van Wachem
Imperial College, London

Friday 16th of October 2009

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|-------|--|------------------|
| 9:30 | Registration and coffee | |
| 9:45 | Fundamentals, Classification of Multi-Phase Flows (MPF), Integral Characterisation of MPF (volume fraction, dense v dilute, inter-particle spacing). | Prof. Oliemans |
| 11:00 | Refreshments | |
| 11:20 | Some examples, sources of errors, checklist of BPG. | Prof. Oliemans |
| 12:10 | Lunch | |
| 13:10 | Forces acting on particles, droplets and bubbles. Overview of numerical methods for MPF, RANS based methods, Euler-Lagrange approach. Industrial examples for MPF: Pipe flow, particle laden jets. | Prof. Sommerfeld |
| 15:00 | Refreshments | |
| 15:20 | Point-particle DNS LES, Euler/Euler approach. Industrial examples for MPF: Fluidised beds. Some experience with commercial codes. | Prof. van Wachem |
| 17:00 | Brief Q&A | |
| 17:20 | Seminar Closes | |

