

Announcement for 33rd series of Short Courses
on

Modelling and Computation of Multiphase Flows
Part I: Bases
Part IIA: New Reactor Systems and Methods
or
Part IIB: Computational *Multi-Fluid Dynamics (CMFD)*
Part III: CMFD with Commercial Codes

Zurich, Switzerland, 15-19 February 2016
Hosted by the
Swiss Federal Institute of Technology (ETH)
in Zurich, Switzerland.

Multiphase flows and heat transfer with phase change are of interest to researchers, scientists and engineers working in a multitude of industries. Courses similar to this one have been offered at ETH-Zurich continuously since 1984. Over the years, the courses have continuously evolved, reflecting on-going progress and developments.

The courses are organized in a modular form as an intensive introduction for persons having basic knowledge of fluid mechanics, heat transfer, and numerical techniques (introductory tutorial texts are e-mailed to the participants before the course), but also serve as advanced courses for specialists wishing to obtain the latest information.

Part I, Bases, covers the common background material and emphasises the latest empirical and mechanistic modelling, computational and instrumentation aspects of multiphase flows. A tutorial text is e-mailed to the participants before the course to introduce the very basic concepts and fill any basic gaps in their background, so that they can participate in the best possible way.

Part IIA, New Reactor Systems and Methods, covers multiphase flow topics of particular interest to the nuclear industry. Some of the most recently proposed advanced reactor designs and the main multiphase phenomena of importance to the nuclear industry are treated. The state-of-the-art and beyond in modelling and simulation methods (including CFD and CMFD applications) for core design and accident analysis is introduced. An article introducing Light Water Reactors will be e-mailed to the participants in Part IIA as tutorial material before the course.

Part IIB, Computational *Multi-Fluid Dynamics (CMFD)*, reflects the growing interest in the application of CFD techniques to *multi*-phase flows and covers the most common computational techniques. The introductory chapters from a book authored by Tryggvason, Scardovelli and Zaleski will be emailed to the participants in Part IIB to prepare them for the lectures.

Part III, CMFD with Commercial Codes, is attached to both Parts IIA and IIB. The participants will hear commercial code developers discuss their products for both nuclear and other applications.

Course language: English

Lecturers: S. Banerjee, D. Bestion, J. Buongiorno, M.L. Corradini, G.F. Hewitt, D. Lakehal, Simon Lo, B. Niceno, H.-M. Prasser, G. Tryggvason, S.A. Vasquez, G. Yadigaroglu and S. Zaleski.

For further information contact by e-mail:

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[ETH ML K 14, Sonneggstrasse 3, CH-8092 Zurich, Switzerland. Tel. +41-44 632.88 21]

Zurich, September 2015

Two shorter announcement alternatives follow in the next two pages

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Part I, Bases, covers the common background material and emphasises the latest modelling and computational aspects of multiphase flows.

Part IIA, New Reactor Systems and Methods, covers topics of particular interest to nuclear engineers (including phenomena in advanced reactor designs) and the state-of-the-art and beyond in modelling and simulation methods.

Part IIB, Computational *Multi-Fluid Dynamics* (CMFD), reflects the growing interest in the application of CFD techniques to multiphase flows.

Part III, CMFD with Commercial Codes, is attached to both Parts IIA and IIB.

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