Registration

www.ercoftac.org

Location

GE Global Research Centre
Freisinger Landstrasse 50
D-85748 Garching b. Munich
Germany
The GE Global Research centre is located on the outskirts of Munich with excellent access to the centre and Munich Airport by the autobahn, ring road and train networks.

Course fees

€640 ERCOFTAC members
€995 Non-ERCOFTAC members

This fee includes: course registration, course material, lunch, refreshments and course dinner. Please note that accommodation is not included in this fee.

Registration

Please contact Dr Richard Seoud at the earliest opportunity to reserve a place:

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ERCOFTAC Industry Engagement Officer

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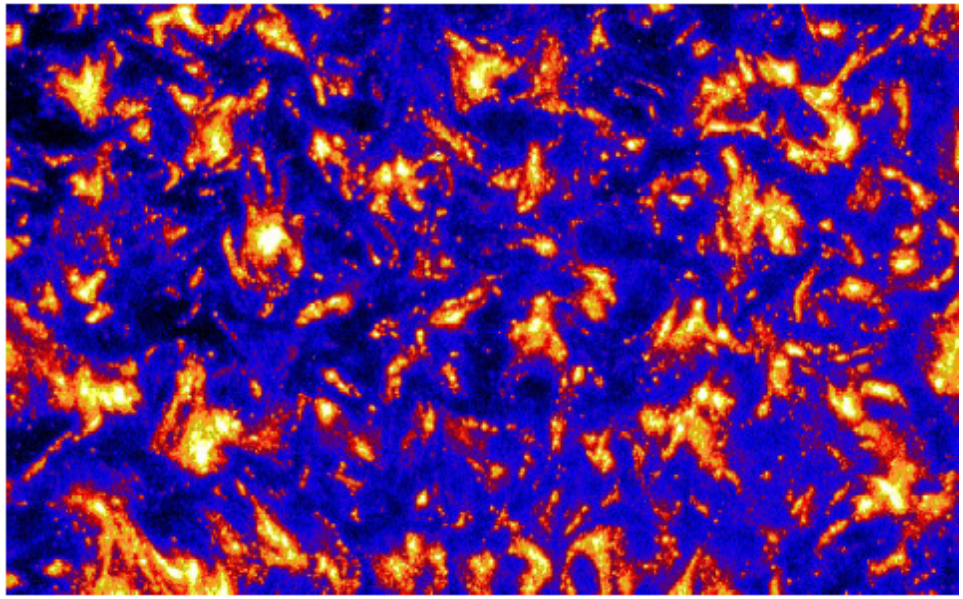
Hybrid RANS-LES Methods for Industrial CFD:

Overview, Guidance and Examples

Best Practice Guidance Series: IV

www.ercoftac.org



27-28 May 2010

GE Global Research Centre, Munich, Germany

Information

ERCOFTAC, a world leader in applied fluid mechanics, is proud to announce a two day course on *'Hybrid RANS-LES Methods for Industrial CFD'* as part of the **ERCOFTAC Best Practice Guidance Course series.**

Turbulence is one of the last remaining challenges in the simulation of fluid flows. Although RANS (Reynolds-Averaged Navier Stokes) turbulence models are still very widely used, these approaches are being slowly supplanted by Large Eddy Simulation (LES). However, LES is prohibitively expensive for the industrial simulation of wall-bounded flows, especially at high Reynolds number. As a result, a family of Hybrid RANS-LES techniques, of which Detached Eddy Simulation (DES) is one member, are being increasingly used for the modelling of flow in and around complex geometries. Due to the current lack of readily-available expert guidance on the application of Hybrid RANS-LES techniques, and the emergence of DES as one of the tools of the trade, ERCOFTAC has drawn upon its worldwide network of academic and industrial experts to provide a training course aimed at an industrial CFD audience and relevant to a wide range of industry sectors including: Aerospace, automotive, chemical and process, civil and built environment, power generation and the wider engineering community. Specifically, this course aims to provide:

- An overview of turbulence modelling.
- A firm foundation in the theory and ideas underlying, RANS, LES and Hybrid RANS-LES techniques.
- Recommendation and guidance for the appropriate and effective application of Hybrid RANS-LES. Examples from real-world engineering simulations, using the DES class of models.

Speakers

- Prof. Michael Leschziner, *Imperial College*
- Prof. Michael Strelets, *University of St Petersburg*
- Dr Florian Menter *Ansys, Germany*
- Dr. Charles Mockett, *University of Berlin*
- Dr. Dominic von Terzi, *University of Karlsruhe*

Programme – Day 1

Thursday, 27 May 2010

8:45	***Registration and coffee***	
	Overview	
9:15	Modelling and simulation in the context of turbulent flow CFD – an introductory overview	*Prof. M. Leschziner*
10:20	Overview and classification of Hybrid RANS-LES methods	*Dr. D. von Terzi*
11:20	***Refreshments***	
	Unsteady Methods for Industrial Applications	
11:40	WMLES: Alternative approaches, examples, strengths & weaknesses	*Prof. M. Leschziner*
12:30	***Lunch***	
13:30	DES:Motivation, formulation, and enhanced versions (Part1)	*Prof. M. Strelets*
14:45	DES:Motivation, formulation, and enhanced versions (Part 2)	*Prof. M. Strelets*
15:35	***Refreshments***	*All Speakers*
15:55	Open panel discussion	
16:40	Day 1 closes	
19:30	***Course Dinner***	

Programme – Day 2

Friday, 28 May 2010

Unsteady Methods for Industrial Applications

8:30	***Refreshments***	
9:00	Numerical consideration for Hybrid RANS-LES	*Dr. C. Mockett*
9:50	URANS: Applicability,pitfalls, and the recent SAS approach	*Dr. F. Menter*
10:50	***Refreshments***	

Recommendations & guidance for Hybrid RANS- LES

11:10	Mesh design for Hybrid RANS-LES	*Dr. C. Mockett*
12:00	***Lunch***	
13:50	Solution set-up and post processing	*Dr. C. Mockett*
14:40	Implementation and validation	*Dr. C. Mockett*
15:10	***Refreshments***	
15:20	Executive summary & open panel discussion	*All Speakers*
16:15	Day 2 closes	

End of Course