ERCOFTAC Hybrid RANS-LES Methods for Industrial CFD
## 9-10 November 2015, ANSYS, Otterfing, Germany

	Monday 9 November 2015	
9:00	**Registration & Coffee**	
	Overview	
9:30	Fundamentals of turbulence and turbulence modelling, RANS (in relation to hybrid RANS-LES modelling)	**Dr. T. Craft**
11:30	**Refreshment**	
	Modelling Approaches and Industrial Applications	
12:00	Advanced URANS and SAS	**Dr. F. Menter**
13:00	**Lunch**	
14:00	DES and enhanced versions	**Dr. F. Menter (presenter) & Prof. M. Strelets**
16:00	**Refreshment**	
16:30	**Q&A**	**All**
17:00	**Close**	

	Tuesday 10 November 2015	
8:30	**Coffee**	
	Modelling Approaches and Industrial Applications	
9:00	Embedded LES, and RANS-LES interface	**Dr. A. Revell**
10:00	Hybrid RANS-LES modelling and applications-I	**Prof. S.H. Peng**
11:00	Refreshment	
11:30	Hybrid RANS-LES modelling and applications-II	**Prof. S.H. Peng**
12:30	**Lunch**	
	Recommendation & Guidances	
13:15	Inflow turbulence conditions and modelling-related numerical issues	**Dr. A. Revell**
14:15	Implementation and Validation SAS,DES & variants, embedded LES and other hybrid RANS-LES methods	**ALL**
15:15	Refreshments	
16:00	Q&A	
16:30	Close	
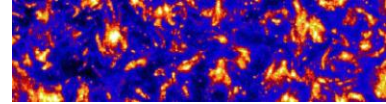
Aims

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 the tool 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 SAS, DES & variants and embedded LES and other Hybrid RANS-LES class of models.

Lecturers

Prof. Shia-Hui Peng, FOI, Stockholm, Sweden –Course Coordinator
Prof. Michael Strelets, St Petersburg Univ, St. Petersburg, Russia
Dr. Florian Menter, Ansys, Germany
Dr. Tim Craft, Univ. of Manchester, Manchester, UK
Dr. Alistair Revell, Univ. of Manchester, Manchester, UK

Fees:

Members - €580
Non-Members - €850.
Please note fees do not cover accommodation.