

Hybrid RANS-LES Methods for Industrial CFD, (VIII)

Overview, Guidance and Examples

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Venue: NUMECA, Brussels, Belgium

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AIM:

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 DES class of models.

Fees:

ERCOFTAC Members: €570

Non-Members: €870

Students: €430

Please note, fees cover course material, lunches and refreshments, but NOT accommodation.

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Best Practices Guidelines for CFD of Turbulent Combustion ,

Including hydrogen combustion, emission modeling, spray atomization modeling and machine learning tools

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