Special Issue

Hybrid LES/RANS Simulations in Fundamental, Environmental, and Industrial Applications

Message from the Guest Editor

The developments in computational power and resources over the past few decades has led to widespread adoption of numerical simulation of turbulent flows. Due to the relatively large number of grid points needed to capture all eddies up to the Kolmogorov scale, the direct numerical simulation (DNS) of large Reynolds number flows is currently restricted to small geometries. While using coarser grids in large eddy simulation (LES), we must come up with an adequate method for modelling in order to describe dissipation. Therefore, resolved-LES is still not the best option for flows near walls. Wall-modelled LES (WMLES) is an alternative method, modelling the near-wall area with Reynolds averaged Navier–Stokes (RANS) and resolving the outer region with LES. This Special Issue aims to demonstrate recent advances in wall-modelled LES and in any other approaches that address turbulence simulation of wall-bounded flows with reasonable computational resources. Manuscripts covering the range of "hybrid" models, "wall-stress models (WSM)," and other cutting-edge approaches are encouraged.

Guest Editor

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Deadline for manuscript submissions

closed (10 July 2024)

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Message from the Editor-in-Chief

The concept of entropy is traditionally a quantity in physics that has to do with temperature. However, it is now clear that entropy is deeply related to information theory and the process of inference. As such, entropic techniques have found broad application in the sciences.

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