Special Issue

Computational Fluid Dynamics and Conjugate Heat Transfer

Message from the Guest Editors

Multiphysics, multi-scale and multi-component simulations will play an increasing role in gathering a better understanding of turbulent non-reacting and reacting flows, as well as in the design of new technologies. Although complex fluid motions are of prime importance for first order flow predictions, higher quality numerical predictions will require advanced computational fluid dynamics (CFD) coupled to more physics. In many fields (combustion, rotating machines, aerodynamic, acoustic) unsteady flow methods such as large eddy simulation or direct numerical simulation already give very accurate results. The step forward is, to couple these solutions with other physics, to compose Multiphysics: muti-component frameworks addressing coupled real flows. The special issue aims to provide state of the art methodologies in the field of conjugate heat transfer, where CFD solvers are coupled to heat transfer (including conduction and radiation). Specific topics could include, but are not limited to, physical modeling, numerics, high performance computing, methodologies and framework, with particular interest in academic research and industrial applications.

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