OPTIMISATION OF HEAT TRANSFER AND FLUID-BASED PROBLEMS

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ABSTRACT

The proposed minisymposium (MS) will showcase the current state-of-the-art within optimisation of heat transfer and fluid-based problems. Special focus will be on topology optimisation of these problems, which is a relatively young area of research and currently under rapid development with contributions from research groups across the world. Papers applying traditional optimisation methods, such as size, shape and configuration, are also welcome.

The MS invites papers applying all optimisation methods to both heat transfer and fluid-based problems:

1. Heat transfer problems: Pure conduction, as well as simplified convection models and full conjugate heat transfer models.

2. Fluid-based problems: Fluid flow problems (stationary/transient, laminar/turbulent, Newtonian/non-Newtonian, etc.), as well as coupled fluid-based models (fluid-structure interaction, species transport, reacting flows, etc.).

Submissions to the MS is expected to push the horizon of this developing research field.

Submissions may treat anything from analytical derivations, through simple two-dimensional investigations, to realistic three-dimensional problems. The treatment of three-dimensional problems is highly encouraged. As moving into three dimensions inherently introduces a large computational cost, perspectives on computational efficiency are hence key components with respect to extendibility of the proposed methodologies to more complex problems (transient, turbulent, etc.).