

Computational Approaches in Heat Transfer Optimisation

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Computational design optimisation methods are being used increasingly to solve complex heat transfer design problems in a range of applications, and are addressing critical cooling challenges in the aerospace, automotive and electronics industries. This presentation will highlight the scale of the computational challenges presented by modern heat transfer systems and will describe popular computational methods to optimise such systems in feasible time-scales, through examples motivated by aerospace and electronics cooling. A number of limitations of current computational approaches will be highlighted and the advances needed to promote their wider uptake throughout industry will be discussed.