

HIGH ORDER METHODS WITH APPLICATIONS TO AERODYNAMICS AND AEROACOUSTICS

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ABSTRACT

This minisymposium (MS) will focus on high order CFD methods for compressible flows. High order methods can be a paradigm change in the form in which CFD is used by industry. They have the potential to significantly reduce the man-hour costs in generating adequate meshes and they may allow addressing applications which are currently extremely costly. However, some problems still remain to be solved before such changes could really materialize. The symposium intends to address the progress towards the solution of some of these problems, as well as applications of high order methods to flows of practical interest. Therefore, the list of subjects of interest to this MS includes, but it is not limited to, innovative high order spatial discretization techniques, adequate preconditioners for high order methods, mesh refinement strategies, high order geometry handling, shock capturing methods for high order schemes, implementation of turbulence models in the context of high order methods, efficient parallel algorithms for standard cluster-like homogeneous architectures as well as heterogeneous computational environments, and high order post-processing tools. It is envisioned that the MS will also showcase practical applications of high order methods in areas such as aerodynamics, large eddy and direct numerical simulations, and aeroacoustics, but contributions from related areas are also welcomed.