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TOWARDS INDUSTRIALISATION OF HIGH ORDER METHODS

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ABSTRACT

High order methods (HOM), such as discontinuous Galerkin, e.g. [1-4] or Flux reconstruction methods [5], for flow problems have a strong potential to provide high accuracy. Even in non-smooth turbulent flows HOM can provide efficient solutions and outperform classic low order methods.

To industrialise these methods, robustness, physical model complexity and computational performance need to be improved but the increasing interest of industry is accelerating these development towards an industrial maturity [6]. It is generally considered that HOM could form the next generation of industrial CFD tools.

In this mini-symposium, we invite scientists and industrial partners that aim at removing some of the current limitations of high order methods for industrial applications.

Relevant topics include:

- High order mesh generation
- Local h-p adaption
- Efficient time-marching schemes (e.g. multigrid)
- Turbulent flows using high order methods
- Multi-physics using HOM (e.g. fluid-structure interactions or acoustics)
- Overset grids in HOM

- HOM output data handling and post processing
- Application test cases, benchmarks, and validations
- Industrial scenarios and challenges

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