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POLYTOPAL METHODS AND APPLICATIONS: A NEMESIS MINI-SYMPOSIUM

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ABSTRACT

Finite elements are among the most popular discretisation methods for models based on partial differential equations. Despite their popularity, however, they still can display important limitations in many advanced applications, linked to both the constraints on the mesh and the need to identify explicit global function spaces. Trying to overcome or mitigate such limitations is one of the goals of polytopal methods. These methods support much more general meshes than standard finite elements, and are more flexible in the definition of the underlying discrete spaces. Over the years, several successful approaches to the design and analysis of polytopal methods have been proposed including, e.g., in alphabetical order, the Discrete de Rham (DDR), Hybrid High-Order (HHO), polytopal Discontinuous Galerkin (polyDG), and Virtual Element (VEM) frameworks. The goal of this mini-symposium is to gather researchers working on the application of the above and related approaches to real-life problems, from both the theoretical and practical points of view.

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