RECENT ADVANCES IN POLYTOPAL FINITE ELEMENT METHODS

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ABSTRACT

Polytopal finite element methods for partial differential equations (PDEs) have been the subject of much attention in recent decades, both in terms of numerical analysis and employment in a diverse range of applications. This interest is due to the numerous advantages of such methods, as they allow for easier treatment of complex boundaries or interfaces, heterogeneous materials, structure-preserving properties, and adaptively refined meshes. This minisymposium focuses on recent advances and challenges in the theoretical and computational aspects of methods in the polytopal family - including Virtual Element (VE) [1], Polytopal Discontinuous Galerkin (PolyDG) [2], Hybrid High-Order (HHO) [3] methods - as well as their application to relevant models in fluid dynamics, elasticity, electromagnetism, wave propagation, and other areas.

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