

Virtual Element Spaces

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We present some general families of $H(\text{div})$ -conforming and $H(\mathbf{curl})$ -conforming Virtual Element Spaces on polygonal and polyhedral decompositions. These spaces could be used, together with the more classical H^1 conforming Virtual Elements (see [1], [2]) and with the usual discontinuous piecewise polynomial spaces, in order to approximate boundary value problems for Partial Differential Equations in mixed formulation.

These spaces generalize the Mixed Virtual Elements of [3], and previous Mimetic Finite Differences for Mixed Formulations. (see e.g.[4]).

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