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A space-time virtual element method for parabolic problems

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We present a space-time virtual element method for parabolic problems [1]. Notably, we generalize the finite element approach in [2] to polytopal meshes.

We employ a nonconforming virtual element method, as it allows for a unified analysis in space-time dimension 2, 3, and 4, and for possible Trefftz variants.

The geometric flexibility of polytopal methods renders our approach very appealing in view of possible space-time adaptive schemes.

We present the theoretical details of the scheme and a convergence result, which we validate with several numerical experiments.

REFERENCES

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