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A posteriori virtual element method for the acoustic vibration problem

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Abstract

In two dimensions, we propose and analyze an a posteriori error estimator for the acoustic spectral problem based on the virtual element method in $\mathrm{H}(\mathrm{div};\Omega)$. Introducing an auxiliary unknown, we use the fact that the primal formulation of the acoustic problem is equivalent to a mixed formulation, in order to prove a superconvergence result, necessary to despise high order terms. Under the virtual element approach, we prove that our local indicator is reliable and globally efficient in the L^2-norm. We provide numerical results to assess the performance of the proposed error estimator.

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References

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