

NOTES ON ASYMPTOTICALLY EXACT A POSTERIORI ERROR ESTIMATES FOR MIXED LAPLACE EIGENVALUE PROBLEMS

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ABSTRACT

This talk deals with asymptotically exact a posteriori error estimates for the approximation of the Laplace eigenvalue problem. First we discuss the results from [1] where the authors used hypercircle techniques by means of a mixed eigenvalue approximations with Raviart-Thomas Finite elements. Second, we recall the post-processings introduced for the eigenvalue and eigenfunction from [2, 3]. Our goal is to combine these approaches. To do so, we define a novel additional local post-processing for the fluxes that appropriately modifies the divergence. Consequently, the new flux can be used to derive upper bounds and still shows good approximation properties. Numerical examples validate the theory and motivate the use of an adaptive mesh refinement.

REFERENCES

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