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Residual-based a posteriori error estimator for the Maxwell's eigenvalue problem

We present an a posteriori estimator of the error in the L^2 -norm for the numerical approximation of the Maxwell's eigenvalue problem by means of Nédélec finite elements. Our analysis is based on a Helmholtz decomposition of the error, where, in particular, the L^2 -orthogonality property is used to derive a superconvergence result for the eigenfunction approximation. The analysis also makes use of a priori error estimates and the additional regularity of the eigenfunctions. We prove a key result about superconvergence between the L^2 -orthogonal projection of the exact eigenfunction onto the curl of the Nédélec space and the eigenfunction approximation. Reliability of the a posteriori error estimator is proved up to higher order terms. Finally, the efficiency of the error indicators is shown by using a standard bubble functions technique.

Data	Xoves, 3 de marzo de 2016
Lugar	Salón de Graos - Facultade de Matemáticas Poderase seguir por videoconferencia dende o Campus de Lugo
Hora	12:00
Idioma	Castelán