

ON THE FINITE ELEMENT LEAST SQUARES APPROXIMATION OF EIGENVALUE PROBLEMS

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ABSTRACT. In this talk I will review our recent work on the numerical approximation of the spectrum associated with finite element least squares discretizations.

We started from the Poisson problem [3] and linear elasticity [4, 1, 2] and went through DPG formulations [6].

Finally, the application of our investigations to the Maxwell eigenvalue problem [5] leads to a new convergent and spurious modes free numerical scheme based on nodal finite elements.

Keywords: Least squares finite element method. Eigenvalue problems. Maxwell's equations.

Mathematics Subject Classifications (2010): 65N25, 65N12, 65N15, 65N30.

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