

论文

QUADRATURE AND EXTRAPOLATION FOR THE VARIABLE COEFFICIENT ELLIPTIC EIGENVALUE PROBLEM

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摘要 For the variable coefficient elliptic eigenvalue problem on a smooth domain or a convex polygonal domain, a numerical quadrature scheme over triangles is used for computing the coefficient of the resulting linear finite element system. The effect of numerical integration is studied. The corresponding discrete eigenvalue with linear finite elements is shown to admit asymptotic error expansions for certain classes of "uniform" meshes. Hence, the Richardson extrapolation increases the accuracy of the scheme from second to fourth order.

关键词 [Eigenvalue](#), [finite element](#), [numerical quadrature](#)

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Key words [Eigenvalue](#) [finite element](#) [numerical quadrature](#) [Richardson extrapolation](#)

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