

INSTANCE OPTIMALITY OF THE MAXIMUM STRATEGY

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We study the adaptive finite element approximation of the Dirichlet problem $-\Delta u = f$ with zero boundary values using newest vertex bisection. Our approach is based on the minimization of the corresponding Dirichlet energy. Our approach works for lower and higher order elements. We show that the maximum strategy attains every energy level with a number of degrees of freedom, which is proportional to the optimal number. As a consequence we achieve instance optimality of the error.

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