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On first and second order box schemes. (English) Zbl 0649.65052

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The box method for discretizing elliptic boundary value problems is discussed. Error estimates of first and second order between the Galerkin solution and the box method solution are proved. A proposal for a new second order box-like scheme is made.

Reviewer: W.Hackbusch

MSC:

65N06 Finite difference methods for boundary value problems involving PDEs
65N12 Stability and convergence of numerical methods for boundary value problems involving PDEs
65N30 Finite element, Rayleigh-Ritz and Galerkin methods for boundary value problems involving PDEs
35J25 Boundary value problems for second-order elliptic equations

Keywords:

box method; error estimates; Galerkin solution; comparison with the finite element method

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