Rybak, I. V.

Monotone and conservative difference schemes for elliptic equations with mixed derivatives.

(English) Zbl 1081.65098
Math. Model. Anal. 9, No. 2, 169-178 (2004).

A new difference scheme for elliptic boundary value problems in the plane with mixed derivatives and alternating coefficients is presented. It is shown that this scheme is conservative, has the second order of approximation and satisfies the grid maximum principle. A priori estimates of stability and convergence in the uniform norm are also obtained.

Reviewer: Sui Sun Cheng (Hsinchu)

MSC:

65N06	Finite difference methods for boundary value problems involving PDEs	Cited in **2** Documents
65N12	Stability and convergence of numerical methods for boundary value problems involving PDEs	
65N15	Error bounds for boundary value problems involving PDEs	

Keywords:

elliptic equations; conservative difference scheme; a priori error estimate; grid maximum principle; stability; convergence