

On the convergence of solutions for a class of nonconformal FEM schemes for quasilinear elliptic equations

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Abstract

We consider versions of the nonconformal finite element method for the approximation to a second-order quasilinear elliptic equation in divergence form. For the construction of grid schemes, we use an approach used earlier for the nonstationary convection-diffusion equation and based on the Galerkin-Petrov limit approximation to the mixed statement of the original problem. The accuracy of solutions of nonconformal schemes with triangular linear finite elements is estimated in the absence of interior penalty terms, which are usually used in methods close to DG-methods for the stabilization of the scheme solution. © 2013 Pleiades Publishing, Ltd.

<http://dx.doi.org/10.1134/S0012266113090139>
