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Author: Andreev, A. B.; Racheva, M. R.

Short title: A Zienkiewicz-type finite element applied to fourth-order problems.

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Review text:

The authors consider the biharmonic equation, with a homogeneous boundary condition, and its associated eigenvalue problem. They present finite element schemes for both problems based on the use of a C^0 -nonconforming Zienkiewicz-type triangle elements. The convergence order of the both schemes is one in some discrete Sobolev of order two. It is presented a relatively simple post-processing method that gives better accuracy for eigenvalues. It is based on a postprocessing technique whereby an additional solving of a source problem on augmented FE space is involved. Numerical examples explaining stated results are presented.