REMARKS ON THE CIARLET-RAVIART MIXED FINITE ELEMENT

Y.D. YANG† AND J.B. GAO‡

Abstract. This paper derives a new scheme for the mixed finite element method for the biharmonic equation in which the flow function is approximated by piecewise quadratic polynomials and vortex function by piecewise linear polynomials. Assuming that the partition, with triangles as elements, is quasi-uniform, then the proposed scheme can achieve the approximation order that is observed by the Ciarlet-Raviart mixed finite element when approximating the flow function and the vortex functions by piecewise quadratic polynomials.

Key words. Ciarlet-Raviart mixed finite element, biharmonic problem.

AMS subject classification. 65L60.

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‡Department of Mathematics, Guizhou Normal University, Guiyang, Guizhou, P.R. China
§Department of Mathematics, Huazhong University of Science and Technology, Wuhan 430074, P.R. China. This author is supported by the Postdoctoral Science Foundation of China, the National Natural Science Foundation of China and the Natural Science Foundation for Youths provided by HUST.