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A WEAKLY OVER-PENALIZED SYMMETRIC INTERIOR PENALTY METHOD FOR THE BIHARMONIC PROBLEM*

SUSANNE C. BRENNER[†], THIRUPATHI GUDI[‡], AND LI-YENG SUNG[†]

Abstract. We study a weakly over-penalized symmetric interior penalty method for the biharmonic problem that is intrinsically parallel. Both *a priori* error analysis and *a posteriori* error analysis are carried out. The performance of the method is illustrated by numerical experiments.

Key words. biharmonic problem, finite element, interior penalty method, weak over-penalization, Morley element, fourth order

AMS subject classifications. 65N30, 65N15

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[†]Department of Mathematics and Center for Computation and Technology, Louisiana State University, Baton Rouge, LA 70803 ({brenner,sung}@math.lsu.edu).

[‡]Center for Computation and Technology, Louisiana State University, Baton Rouge, LA 70803 (tgudi@cct.lsu.edu).

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