Kening Wang* (kening.wang@unf.edu), Department of Mathematics and Statistics, University of North Florida, Jacksonville, FL 32224, and Brenner. An Iterative Substructuring Algorithm for $C^0$ Interior Penalty Methods.

We study the Bramble-Pasciak-Schatz (BPS) preconditioner that can be used in the iterative solution of the discrete problems resulting from $C^0$ interior penalty methods for fourth order elliptic boundary value problems.

We prove that the condition number of the preconditioned system for the BPS preconditioner is of order $O((1 + \ln(H/h))^2)$, where $H$ and $h$ represent the coarse mesh size and the fine mesh size respectively.

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