1035-65-1877   **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.

This is a joint work with Dr. Susanne C. Brenner. (Received September 20, 2007)