Tzanio V. Kolev
H(curl) auxiliary mesh preconditioning

Lawrence Livermore National Laboratory
P O Box 808
L-560
Livermore
CA 94551
`tzanio@llnl.gov`
Joseph E. Pasciak
Panayot S. Vassilevski

In this talk we present a two-level preconditioning scheme for H(curl) bilinear forms. The scheme utilizes an auxiliary problem on a related mesh that is more amenable for constructing optimal order multigrid methods. Combined with a domain embedding (or "fictitious" domain) technique our method can precondition a problem defined on a very complicated mesh by a standard geometric multigrid on a box.