Mathematics > Numerical Analysis

Multigrid Preconditioner for Nonconforming Discretization of Elliptic Problems with Jump Coefficients

Blanca Ayuso De Dios, Michael Holst, Yunrong Zhu, Ludmil Zikatanov

(Submitted on 11 Jul 2011)

In this paper, we present a multigrid preconditioner for solving the linear system arising from the piecewise linear nonconforming Crouzeix-Raviart discretization of second order elliptic problems with jump coefficients. The preconditioner uses the standard conforming subspaces as coarse spaces. Numerical tests show both robustness with respect to the jump in the coefficient and near-optimality with respect to the number of degrees of freedom.

Comments:	Submitted to DD20 Proceedings
Subjects:	**Numerical Analysis (math.NA)**
MSC classes:	65M55, 65N55, 65F08
Cite as:	**arXiv:1107.2160 [math.NA]**
	(or **arXiv:1107.2160v1 [math.NA]** for this version)

Submission history

From: Yunrong Zhu [view email]
[v1] Mon, 11 Jul 2011 22:29:42 GMT (194kb,D)

Which authors of this paper are endorsers?