Mathematics > Analysis of PDEs

Kozlov-Maz'ya iteration as a form of Landweber iteration

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(Submitted on 12 Jul 2011)

We consider the alternating method of Kozlov and Maz'ya for solving the Cauchy problem for elliptic boundary-value problems. Considering the case of the Laplacian, we show that this method can be recast as a form of Landweber iteration. In addition to conceptual advantages, this observation leads to some practical improvements. We show how to accelerate Kozlov-Maz'ya iteration using the conjugate gradient algorithm, and we show how to modify the method to obtain a more practical stopping criterion.

Comments:	28 pages, 4 figures
Subjects:	**Analysis of PDEs (math.AP)**
Cite as:	**arXiv:1107.2194 [math.AP]**
	(or **arXiv:1107.2194v1 [math.AP]** for this version)

Submission history

From: David Maxwell [view email]
[v1] Tue, 12 Jul 2011 06:19:07 GMT (118kb,D)

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