

FILTER FACTOR ANALYSIS OF AN ITERATIVE MULTILEVEL REGULARIZING METHOD*

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Abstract. Recent results have shown that iterative methods of multigrid type are very precise and efficient for regularizing purposes: the reconstruction quality is of the same level or slightly better than that related to most effective regularizing procedures such as Landweber or conjugate gradients for normal equations, but the associated computational cost is highly reduced. Here we analyze the filter features of one of these multigrid techniques in order to provide a theoretical motivation of the excellent regularizing characteristics experimentally observed in the discussed methods.

Key words. regularization, early termination, filter analysis, boundary conditions, structured matrices

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