Abstracts

A Spectral Iterative Technique with Gram-Schmidt Orthogonalization (Short Papers)

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Iterative schemes based on the minimization of the integrated square error are discussed. In each iteration a basis function is generated in such a way that it is linearly related to the residual error of the previous iteration. A complete orthogonalization of all of these basis functions leads to an optimal convergent scheme for some choices of the basis functions. In order to reduce the computer storage needed to store all of the basis functions, we present an incomplete orthogonalization scheme that still yields an efficient computational method. In this scheme a limited number of basis functions has to be stored. Some numerical results with respect to some representative field problems illustrate the performance of the various versions of the iterative schemes suggested here.

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