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USING LEAST-SQUARES TO FIND AN APPROXIMATE EIGENVECTOR*

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Abstract. The least-squares method can be used to approximate an eigenvector for a matrix when only an approximation is known for the corresponding eigenvalue. In this paper, this technique is analyzed and error estimates are established proving that if the error in the eigenvalue is sufficiently small, then the error in the approximate eigenvector produced by the least-squares method is also small. Also reported are some empirical results based on using the algorithm.

Key words. Least squares, Approximate eigenvector.

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