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ABSTRACT OF PAPER

Title of Paper: Eigenvectors by Norm

Reduction

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ABSTRACT

The abstract should be in the form of a brief and concise statement of the main results or points of view of the paper, without demonstrations and with a minimum of formulae. It should not exceed 100 words and should be compressed if possible into a single paragraph. It should be written in the third person. The abstract should be typewritten and in a form suitable for immediate publication in the MONTHLY.

An iterative procedure for finding the eigenvectors of a symmetric matrix is developed based on a new theorem concerning the commutativity of a simple product matrix with the given symmetric matrix. The Euclidian norm of a residual commutator matrix is iteratively reduced by a modified gradient process which changes the simple product matrix successively until the commutator is forced to zero. This will yield both eigenvectors and eigenvalues to high precision. Several examples are given which give more precise results than some other known methods.