EIGENVALUES AND VECTORS OF A SYMMETRIC MATRIX
USING JACOBI'S METHOD

by

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A programme has been constructed for CSIRAC to compute the eigenvalues and vectors of symmetric matrices using Jacobi's method. Successive orthogonal transformations diagonalize the matrix, the diagonal elements then being the eigenvalues required.

Jacobi's method is suited to fixed point machines, since the numbers arising can easily be kept within register capacity; and store space can be conserved by using the symmetry of the matrix.

The eigenvalues and vectors so obtained are improved by a second-order process. At present matrices up to order 10 have been handled by the programme and the results suggest that, for larger matrices, a combination of methods would be more economical than Jacobi's method alone.

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Editor's Note: The above paper concerned work which was currently in progress in Melbourne. Since the information is considered to have been of ephemeral value only, the author requested that only the above summary be published.