

## A NOTE ON THE ACCURACY OF SYMMETRIC EIGENREDUCTION ALGORITHMS \*

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**Abstract.** We present some experimental results illustrating the fact that on highly ill-conditioned Hermitian matrices the relative accuracy of computed small eigenvalues by QR eigenreduction may drastically depend on the initial permutation of the rows and columns. Mostly there was an “accurate” permutation, but there does not seem to be an easy method to get at it. For banded matrices, like those from structural mechanics, the accurate pre-permutation, if it existed, was mostly non-banded. This is particularly true of tridiagonal matrices which shows that the tridiagonalization is not the only factor responsible for the inaccuracy of the eigenvalues.

**Key words.** LAPACK, QR method, Jacobi method, Hermitian matrices, eigenvalue computation.

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