

## ON THE REDUCTION OF A HAMILTONIAN MATRIX TO HAMILTONIAN SCHUR FORM\*

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**Abstract.** Recently Chu, Liu, and Mehrmann developed an  $O(n^3)$  structure preserving method for computing the Hamiltonian real Schur form of a Hamiltonian matrix. This paper outlines an alternative derivation of the method and an alternative explanation of why the method works. Our approach places emphasis eigenvalue swapping and relies less on matrix manipulations.

**Key words.** Hamiltonian matrix, skew-Hamiltonian matrix, stable invariant subspace, real Schur form

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