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A new look at CMRH and its relation to GMRES

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CMRH (Changing Minimal Residual method based on the Hessenberg process)is a Krylov subspace method which uses the Hessenberg process to produce a basis of a Krylov method, and minimizes a quasi-residual. The CMRH method shares many of the computational properties of the well-known GMRES method.

Hence this method produces convergence curves which are very close to those of GMRES, but using fewer operations and storage. In this paper we present new analysis which explains why CMRH has this good convergence behavior.