

1057-15-405

**Leonard Hoffnung\*** ([leonard.hoffnung@siemens.com](mailto:leonard.hoffnung@siemens.com)), 10824 Hope Street, Cypress, CA 90630.  
*Householder-style M-orthogonal QR.* Preliminary report.

For the symmetric generalized eigenvalue problem  $Kx = \lambda Mx$ , the block Lanczos recurrence requires a QR factorization where  $Q$  is  $M$ -orthogonal. The industrial eigensolver in NX Nastran uses modified Gram-Schmidt to perform the factorization. As an alternative, the talk presents a Householder-style QR factorization that preserves  $M$ -orthogonality using unsymmetric reflectors. (Received January 26, 2010)