1067-15-1712   **Russell L Carden*** (`rlc2@rice.edu`), CAAM, Rice University, 6100 Main St. MS 134, Houston, TX 77005-1892, and **Mark Embree** and **Derek Hansen**. *Behavior of Ritz Values for Normal Matrices and Jordan Blocks.* Preliminary report.

The field of values of a matrix is the closed convex subset of the complex plane containing all Rayleigh quotients, a set useful for understanding stability of dynamical systems, matrix iterations, among other applications. For a Hermitian matrix the field of values is the line connecting the largest and smallest magnitude eigenvalues and the Ritz values, eigenvalues of any restriction, must interlace with the eigenvalues of the full matrix. No similar geometric criteria exists for the Ritz Values of non-Hermitian matrices and in general how Ritz values may distribute themselves throughout the field of values of a matrix is not understood. We show for two particular classes of matrices, normal matrices and Jordan blocks, that the Ritz Values must satisfy some geometric constraints. We illustrate how these results may be useful in analyzing eigenvalue computations. As Ritz values are used in numerous iterative methods a better understanding of their behavior for nonsymmetric matrices could offer a means of further analysis. (Received September 21, 2010)