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Robert L. Sachs* (rsachs@gmu.edu), MSN 3F2, Department of Mathematical Sciences, George Mason University, Fairfax, VA 22030. *A geometric view of orthogonal diagonalization of symmetric matrices.*

The orthogonal diagonalization of symmetric matrices is developed geometrically using a min-max principle. The 2x2 case leads to the higher dimensional cases involving constrained minimizers of a quadratic function. A geometric description of why the gradient vector field is radial at such points is extremely accessible to students. (Received September 21, 2010)