

Re: ellipsoid axis length

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In article <1188586757.034916.49930@xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx>, novis <standshik@xxxxxxxxxx> wrote:

hello all,
suppose $\{x: x^T A^{-1} x = r^2\}$ is an ellipsoid. we know that the principle axes of the ellipsoid is given by the eigenvectors of A. Now how do we show that radius along any particular axis is proportional to the square root of the corresponding eigenvalue of A?
thanks

If Q is the matrix of eigenvectors consider the transformation $y = Qx$. then it should be obvious.

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