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Lek-Heng Lim and **Ke Ye*** (key@math.uchicago.edu), The department of Mathematics, University of Chicago, Chicago, IL 60637. *Schubert varieties and the distance between linear subspaces of different dimensions*. Preliminary report.

The distance between linear subspaces of the same dimension is well known. It is determined by the Riemannian geometry of Grassmannians. In practice, we always want to compare linear subspaces of different dimensions. Based on the Geometry of Grassmannians and Schubert varieties, we find a natural way to compare the distance between linear subspaces of different dimensions. In fact, there are two candidates for the distance between linear subspaces of different dimensions, but in this talk we will show that they are the same. We will also present an explicit formula for the distance between linear subspaces of different dimensions, which involves only the SVD of a matrix. At the end of the talk, we will ask some open problems related to this topic. (Received August 28, 2014)