

# Matrix Computations and Scientific Computing Seminar

Organizer: Jim Demmel and Ming Gu

Wednesday, 12:10–1:00 pm, 380 Soda Hall

---

Nov 19     **Lek-Heng Lim**, University of Chicago

*Distances Between Subspaces of Different Dimensions*

One classical use of SVD is for computing principal angles and various distances between two subspaces of the same dimension. There are a number of applications that call for a notion of distance between two subspaces of different dimensions. In iterative methods, this arises, for example, when one examines the convergence of a sequence of Krylov subspaces of increasing dimensions to a fixed subspace. In this talk, we will discuss various distances for subspaces of different dimensions, including the containment gap due to Tosio Kato.

This is joint work with Ke Ye of Chicago.