

$$\begin{aligned}\lambda_k(A) &= \max_{S_k} \min_{x \in S_k, \|x\| = 1} \langle Ax, x \rangle \\ \lambda_k(A) &= \min_{S_{k-1}} \max_{x \in S_{k-1}^\perp, \|x\| = 1} \langle Ax, x \rangle\end{aligned}\tag{1}$$