

Subspaces that Minimize the Condition Number of a Matrix

S. Joshi and S. Boyd

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- [min_cond_sub.pdf](#)

We define the condition number of a nonsingular matrix on a subspace, and consider the problem of finding a subspace of given dimension that minimizes the condition number of a given matrix. We give a general solution to this problem, and show in particular that when the given dimension is less than half the dimension of the matrix, a subspace can be found on which the condition number of the matrix is one.