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## On the Measure of Feasible Matrices in Compressed Sensing

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In this talk, we study the feasible matrices for the successful recovery of sparse signal using constrained  $\ell_q$  minimization with  $0 < q \leq 1$ . We show that one can associate all  $2 \times 3$  full rank matrices with a probability space and through the characterization by the null space property, one can quantify the size of all  $2 \times 3$  feasible matrices for the successful recovery of sparse signal using  $\ell_q$  minimization. We also study the feasible matrices for the unconstrained  $\ell_q$  minimization and show the equivalence between the unconstrained feasible matrices and feasible matrices.