④ 1) S : Set containing s largest magnitude elements of $\vec{\theta}$

hence S is not same as sparsity. Error bound also increases as
C_1 & C_2 are increasing f^n of $|S|$, $\mu(\Phi\Psi)$
~~so~~ $|S|$ increases $\not\Rightarrow$ Sparsity increases.

2) $\mu(\Psi, \Phi) = \sqrt{n} \max_{\substack{1 \le j \le m \\ 1 \le i \le n}} |\langle \Phi^{(j)}, \Psi_i \rangle|$

↳ This is a function of m

C_1, C_2 are increasing f^n of $\mu(\Phi\Psi)$ which is in turn a f^n of m.

Intuitively it feels that as more the number of measurements will result in better reconstruction.

3) Theorem 5 is more useful than theorem 5A, as it gives the same error bounds as theorem 5A but for a greater range of $|S|$.

4) $\|y - \Phi\Psi\theta\|_2 \le \varepsilon$

we measure $y = \Phi x + \eta$

thus $\|\eta\|_2 \le \varepsilon$

Thus ε is an upper bound on the magnitude of noise vector

$\varepsilon = 0 \Rightarrow \vec{\eta} = \vec{0}$

But ~~our~~ noise has non-zero magnitude.

Setting $\varepsilon = 0$ only works if there is no noise