The projects in the course “compressed sensing and random matrixes”

1. Deterministic RIP matrix: Construct a deterministic RIP matrix $\Phi$. Analysis its RIP property and also show its performance by numerical experiments.


2. Make the numerical experiment in Section 3 in the paper “Stable signal recovery from incomplete and in accurate measurements”.

3. Make the numerical experiment for comparing the different decoding method, such as Bregman iterative [1], OMP algorithm [2], and OMMP algorithm [3] etc.


4. Make the numerical experiment for comparing the $\ell_1$ decoding with the algorithm suggested in [1]. Also, try to extend the algorithm in [1] to the deterministic matrix in [2].

5. Make the numerical experiment for the phase retrieval problem.


6. Study the one-bit compressed sensing.