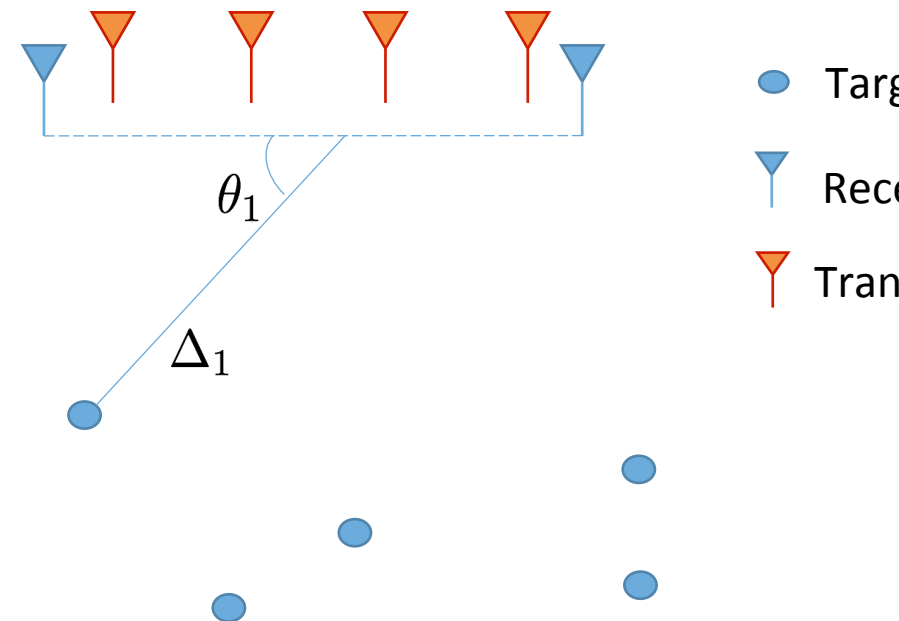




Waveform design for Compressive MIMO Radar

$$y_l(t) = \sum_{k=1}^K \sum_{i=1}^{N_T} \alpha_R(\theta_k, l) \alpha_T(\theta_k, i) s_i(t - \Delta_k) x_k + w_l(t)$$

Design waveforms $(\theta_k, \Delta_k, x_k)$ with minimal number of parameters that scale linearly with number of targets and logarithmically with the search area



Waveform design for Compressive MIMO Radar



Previous approaches that rely on transmission and storage of random waveforms have high Peak-to-Average Power ratio.

We present a structured waveform design with few random parameters ideally suited for implementation and prove its optimality

Mutual Coherence for our sensing scheme is

$$\mu(\mathbf{A}) = \mathcal{O}\left(\sqrt{\frac{\log(N_R N_T N)}{M}}\right).$$

The operator norm of the sensing scheme is

$$\|\mathbf{A}\|_{op} = \mathcal{O}\left(\sqrt{\frac{N_T N}{M} \log(N_R N_T N + N_R M)}\right).$$

