

Representation of F :

We assume that a quadratic inequality representation \mathcal{P}_F of F is given:

$$F = \left\{ x \in \mathbb{R}^n : \begin{aligned} &x^T Q x + 2q^T x + \gamma \leq 0, \\ &\forall (Q, q, \gamma) \in \mathcal{P}_F \end{aligned} \right\}$$

- Any compact set in \mathbb{R}^n can be represented this way.

- \mathcal{P}_F need not be finite.

Wlog, \mathcal{P}_F is a convex cone.