

$$\min_{\mathbf{U}} \int_{t_{\text{iter}}^{\text{initial}}}^{t_{\text{iter}}^{\text{end}}} \mathcal{L}(t, \xi(t), \mathbf{u}(t)) dt$$

Subject to :

$$\mathbf{C}(t, \xi(t), \mathbf{u}(t)) \leq 0$$

$$\phi(t_0, \xi(t_0), t_f, \xi(t_f)) \leq 0$$

Where :

$$\dot{\xi} = \hat{\mathbf{f}}(t, \xi(t), \mathbf{u}(t))$$

Iteration	Cost	Convergence
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MPC Controller

$$\dot{\xi} = \mathbf{f}(t, \xi(t), \mathbf{u}(t))$$

iter = iter + 1