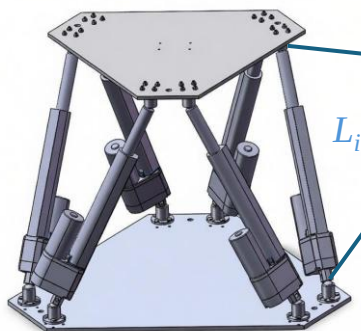


Actuator stroke objective f_1 and its optimization

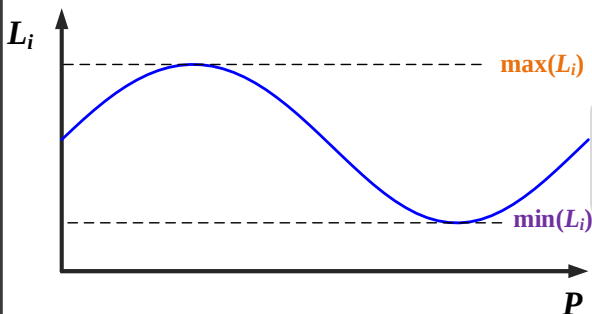
Concept and Definition



Length of the i -th leg L_i
 $L_i = \|T + R \cdot {}^P \mathbf{b}_i - \mathbf{a}_i\|$

Definition of objective:

$$f_1(\mathbf{x}) = \max_{P,i}(L_i) - \min_{P,i}(L_i)$$



P : Set of poses
in the workspace

Optimization Results and Application

Improvement in static and dynamic characteristics

Decrease: Dead load,
motion inertia



Increase: Static
bandwidth, natural
frequency

Meet the real-time tracking requirements of
wave compensation for high-frequency
disturbances

Improvement in space and volume utilization

Effectively compress
the operating
trajectory space and
improve deck
volume utilization

