

Asymptotically Optimal Motion Planning

Optimality

Asymptotic optimality

Definition A probabilistically complete motion planner is **asymptotically optimal** if the expected length of the solution it produces converges to the optimal length as the number of iterations increases.

$$\lim_{n \rightarrow \infty} E[c(P)] = c^*$$

Theorem RRT* is asymptotically optimal.