

Time optimal control with piecewise constant dynamics

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Suppose \mathbb{R}^n is partitioned by a mesh in which each cell has a fixed set of feasible velocities - only those velocities can be used while a trajectory is in the interior of that cell. The minimal time problem seeks a time optimal trajectory originating from x_0 to a terminal point x_1 . We will discuss some of the complications behind such a simple formalism.