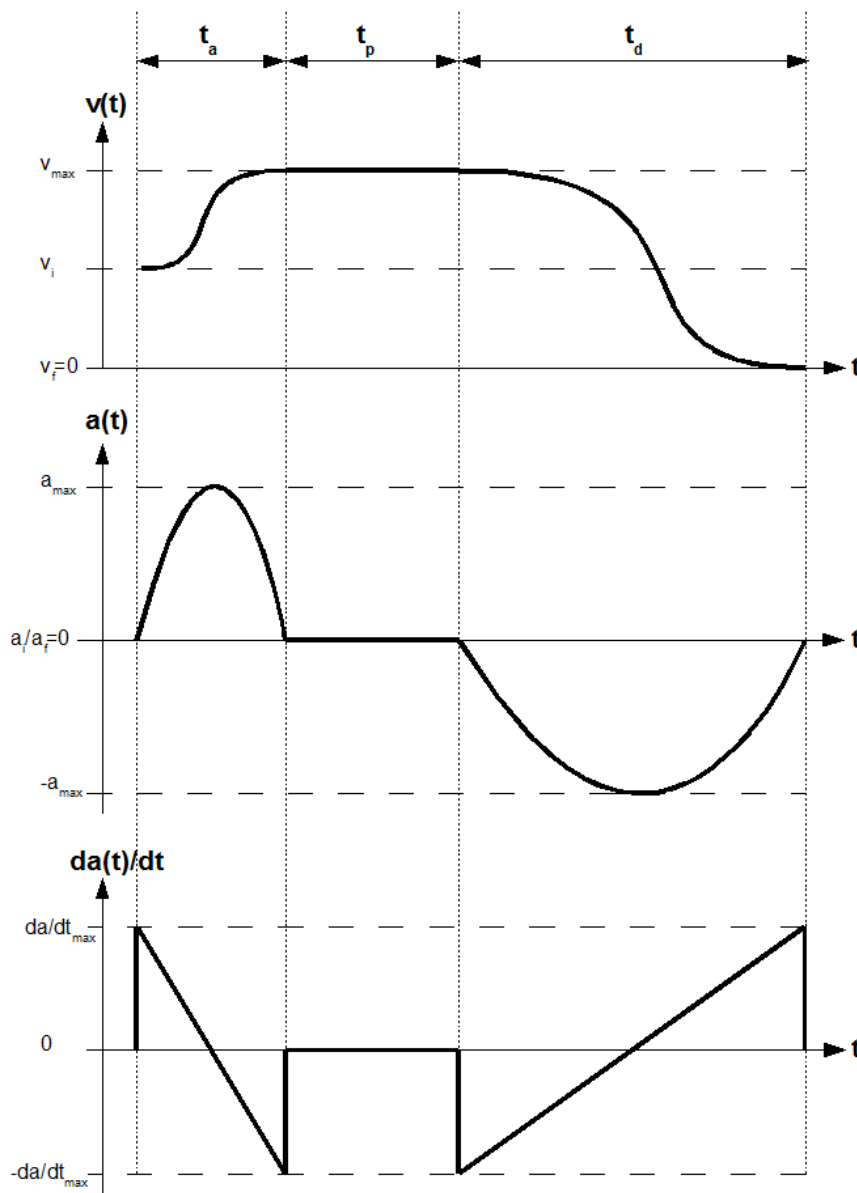


Hints

Velocity Profiles

Velocity Profiles A velocity profile specifies the velocity as a function of time and is used to control the motion of a robot. The velocity profile is usually specified as a third-order polynomial. It is divided into three phases:

- *Acceleration phase:* Acceleration from v_i to v_{max}
- *Plateau phase:* The velocity equals the constant v_{max}
- *Deceleration phase:* Breaking (negative acceleration) from v_{max} to v_f



The profile should have the following characteristics:

- *shock-free:* The acceleration $a(t)$ is continuous.
- *jerk-limited:* The change of acceleration $\dot{a}(t)$ is bounded by sensible limits.