Sarra Samaali

Title:

Tracking Control of Chained Systems: application to nonholonomic unicycle mobile robots

Abstract:

A new vision will be presented to construct a control algorithm which allows us to assure the tracking of a feasible trajectory of the chained form systems. After stabilizing the first variable in finite time, we present a time-varying feedback law that make the remaining variables of the chained system converge polynomially toward a predefined path. This result is applied to make the wheeled mobile robot with front wheel steer tracks a feasible trajectory. Simulation results show that the presented controllers can be used effectively to guide the robot along the reference trajectory.