

Adaptive Cooperative Control of Nonholonomic Mobile Robot Based on Immersion and Invariance

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Abstract : This paper deals with adaptive cooperative control of non holonomic mobile robot moved together in a given formation. The controller is designed based on the Immersion and Invariance (I&I) approach. I&I is a framework for adaptive stabilization of nonlinear systems with uncertain parameters. We investigate the tracking control of non holonomic mobile robot with uncertainties in The I&I-based adaptive controller regulates the angular and linear velocity of non holonomic mobile robot. The results demonstrate that the ability of I&I-based adaptive cooperative control in tracking the position of non holonomic mobile robot.

Keywords : nonholonomic mobile robot, immersion and invariance, adaptive control, uncertain nonlinear systems

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