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Abstract

This paper present a new control method for path tracking of mobile robot based on using fuzzy logic and FOPID controller . Two FOPID controllers are used. Parameters of the two FOPID controllers are optimized offline using genetic algorithm.. These optimized FOPID controllers are used for speed control and azimuth control. Parameters of these controller are adjusted online via fuzzy system. Each FOPID controller is supported by a fuzzy controller for adjusting the parameters online. The adjusting mechanism in the designed control scheme work well when there are variations in the plant parameters and changes in operating conditions.

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Index Terms

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Keywords

Mobile Robot, Particles Swarm Optimization, fuzzy control, FOPID Controller, Trajectory tracking.