

عنوان مقاله:

Reduced Chatter Robot Manipulator Sliding Control: A Novel Multivariable Approach

محل انتشار:

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خلاصه مقاله:

This paper presents a new control approach based on sliding mode theory for robot manipulator. The presented control law includes a multivariable exponential function to eliminate the control signal chattering. Through a theorem, convergence of the states to the sliding surface and uniform global asymptotic stability of the proposed control system are guaranteed based on Lyapunov stability theorem for non-autonomous systems. The proposed approach decreases the tracking error while improves the system speed response and presents a satisfactory control performance as well. Simulating the control system for a 6DOF PUMA560 confirms the validity and effectiveness of the proposed approach.

کلمات کلیدی:

Chattering, Robot manipulator, PUMA 560, Sliding control, Multivariable control

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