

Sliding Mode Control for Active Suspension System with Actuator Delay

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Abstract : Sliding mode controller for a vehicle active suspension system is designed in this study. The widely used quarter car model is preferred and it is aimed to improve the ride comfort of the passengers. The effect of the actuator time delay, which may arise due to the information processing, sensors or actuator dynamics, is also taken into account during the design of the controller. A sliding mode controller was designed that has taken into account the actuator time delay by using Smith predictor. The successful performance of the designed controller is confirmed via numerical results.

Keywords : sliding mode control, active suspension system, actuator, time delay, vehicle

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