

Title: Tyre Force control strategy for semi-active magnetorheological damper suspension system for light-heavy duty truck

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Abstract: A semi-active controller scheme for magnetorheological (MR) damper of a light-heavy vehicle suspension known as Tyre Force Control (TFC) is proposed. The effectiveness of the proposed TFC algorithm is compared with Groundhook (GRD) control. A simulation model was developed and simulated using MATLAB Simulink software. The performance of the semi-active MR damper using TFC is analytically studied. Ride test was conducted at three different speeds and two different bumps, and the simulation results of TFC and GRD are compared and analysed. The results showed that the proposed controller is able to reduce tyre force significantly compared to GRD control strategy.