

Sliding Mode Control of a Bus Suspension System

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Abstract : The vibrations, caused by the irregularities of the road surface, are to be suppressed via suspension systems. In this paper, sliding mode control for a half bus model with air suspension system is presented. The bus is modelled as five degrees of freedom (DoF) system. The mathematical model of the half bus is developed using Lagrange Equations. For time domain analysis, the bus model is assumed to travel at certain speed over the bump road. The numerical results of the analysis indicate that the sliding mode controllers can be effectively used to suppress the vibrations and to improve the ride comfort of the busses.

Keywords : active suspension system, air suspension, bus model, sliding mode control

Conference Title : ICAME 2016 : International Conference on Automotive and Mechanical Engineering

Conference Location : Barcelona, Spain

Conference Dates : August 11-12, 2016