

ABSTRACT:

This paper presents the roll moment rejection control of pneumatically actuated active roll control (ARC) suspension system for a passenger vehicle. The controller consists of the two controller loops namely inner loop controller to cancel out the unwanted weight transfer and outer loop controller to suppress both body vertical displacement and body roll angle using Fuzzy Logic Control. Two types of vehicle dynamics test are performed by simulation for the purposed control structure namely step steer test and double lane change test. The results of simulation show that the ARC system is able to significantly improve the dynamic performance of the vehicle compared with the passive system such as body roll angle, body roll rate, body vertical acceleration and body vertical displacement.