

An Air Spring Model Considered Characteristics of Non-linear Damping for Vertical Motion

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This paper reports dynamic characteristics and a non-linear model of the air spring for vertical motion. By making a dynamic model that expresses the characteristics of the air spring precisely; it is possible to estimate accurately the dynamic characteristics of a vehicle and is contributive to improve the ride comfort of the vehicle. Based on the results of the examination of the air spring, the author examined the dynamic model of the air spring. Consequently, the characteristic of damping of the air spring is neither viscous (linear) nor quadratic, is proportional to a velocity exponent of approximately 1.7.