



Gain-scheduled wheel slip reset control in automotive brake systems /

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Analítica

Wheel slip control bases its effectiveness on operating in the maximum adherence zone, guaranteeing the correct handling of the vehicle in any moment. The use of brake-by-wire systems and electromechanical actuators makes possible to control each wheel slip independently, improving, as a result, the accuracy and performance of braking systems. In this paper, a new controller, based on reset control, is proposed to enhance the overall effectiveness of the braking maneuver. This improvement proceed from the reduction of the braking distance as well as a betterment of the outputs of the system such as the transient time and the overshooting. The robustness of the system to changes in the friction conditions is also improved by reset control. The design of the controller has been done based on the quarter car model considering only the longitudinal dynamics. The Pacejka model has been used to model the road-tire interaction

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