

车辆转向时牵引力控制系统前轮滑转率算法

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摘要: 车辆转向时,用后轮轮速作为参考车速计算驱动轮滑转率会造成计算偏差,造成牵引力控制系统的误干涉。为此利用前轮参考轮速计算转弯时的前驱动轮滑转率,并提出了利用横摆角速度信号的直接开方法以及利用前轮转角信号的前轮转角补偿法进行滑转率计算。试验表明2种算法都有效,前者运算时间为0.8 ms,后者运算时间为0.3 ms,因而选用后者。利用该算法修正后牵引力控制系统没有出现误干涉。The driving wheel slip ratio calculation by using rear wheel speed as reference speed could lead to a calculation mistake and wrong intervention of traction control system when vehicle was cornering. The term of front wheel reference speed was introduced for calculating driving wheel slip ratio under cornering situation. The extraction method by using the yaw rate signal and the steering wheel angle compensation method by using the front wheel angle signal were introduced for calculating driving wheel slip ratio. Experimental results confirmed the effectiveness of these two algorithms, the former algorithm took 0.8 ms and the latter algorithm took 0.3 ms, and so the latter algorithm has been taken. Wrong intervention disappeared after the modification by the steering wheel angle compensation method.

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