汽车联合制动系统制动力分配系数优化 Optimization of Braking Force Distribution Parameter of United Brake System of Automobile

赵迎生 赵又群 魏超

浙江师范大学

关键词： 汽车 联合制动系统 电涡流缓速器 制动力分配系数 优化

摘 要： 由电涡流缓速器和汽车主制动器构成的联合制动系统中，变化的制动力分配系数导致控制单元设计复杂。因此，分析了电涡流缓速器转子盘和制动盘以及制动鼓在不同制动工况下的温度变化过程，建立了联合制动系统制动力分配的优化函数，确定了制动力分配系数的具体数值为0.7。在虚拟多坡度道路上进行了制动过程的模拟计算，结果表明具有优化制动力分配系数的联合制动系统的电涡流缓速器转子盘温度和主制动器的制动盘及制动鼓的温度都处于较低的水平，且变化趋势一致。 The temperature change processes of functioning parts of the united braking system consist of eddy-current retarder and primary brakes were analyzed to put forward the optimal function for the braking force distribution of the united braking system, and the value of the braking force distribution parameter was suggested. The braking process simulation of an actual passenger car on a virtual multi-gradient ramp was carried out, and the results showed that the final temperature of eddy-current retarder rotor and disc brakes and drum brakes of the united braking force with optimal distribution parameter is relatively low, and varies in a uniform trend. The optimal result of braking force distribution parameter can be refered to for the engineering practice requirements.

查看全文（请使用Adobe Acrobat 6.0版本浏览） 返回首页 引用本文