

汽车悬架、转向和制动系统建模与相互影响分析 System Modeling and Interaction Analysis of Vehicle Suspension, Steering and Braking Systems

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关键词: 车辆集成控制 悬架 转向 制动 影响因素

摘要: 考虑汽车在多种工况下行驶, 分别建立了汽车底盘中悬架、转向和制动系统运动的数学模型, 分析了3个系统运动之间的相互联系和制约关系。针对多种工况下行驶时各系统之间的相互影响分析, 提出了3个系统分别进行设计时应注意的问题和采取的措施。仿真和试验结果表明, 3个系统之间的联系紧密, 相互制约, 表明了所建数学模型的正确性。Considering vehicles running in many different work conditions, the mathematical models of suspension, steering and braking system are established. The interconnections and confinements among the three systems are analyzed. Based on the analysis of interrelationships among the systems operated under different work conditions, the problems needed to be paid attention to and the measures needed to be taken in the system designs are presented. The results of simulation and testing show the close connection and interaction among the three systems, and the correctness of the established models.

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