



混合动力汽车用行星齿轮结构参数优化及应用

Optimization and application on planetary gear set for hybrid

投稿时间: 2009-1-8 最后修改时间: 2009-12-17

DOI: 稿件编号: 中图分类号: U467.2

中文关键词: [混合动力](#) [行星齿轮优化](#) [动力学分析](#)

英文关键词: [hybrid electric vehicle](#) [planetary gear set optimization](#) [dynamic](#)

作者	单位	E-mail
杜爱民	同济大学汽车学院	
宋俊杰	同济大学汽车学院	songjunjie021@163.c
娄光	同济大学汽车学院	

摘要点击次数: 3 全文下载次数: 1

中文摘要

外齿圈和太阳轮的齿数比是行星齿轮机构的特征参数, 确定该参数是动力系统匹配的重要部分, 本文主要是对该特征参数进行进行动力部件的选型设计, 并制定混合动力汽车能量分配策略, 然后对包含行星齿轮机构的整车动力系统进行了动力学和运动学分析参数与动力部件的最高转速和整车设计最高车速的函数关系, 并进行仿真寻优。最后在advisor中进行仿真, 结果表明整车匹配合理,

英文摘要

This paper focuses on the characteristic parameter optimization of the planetary gear set (PGS), which is the gear. And it is the critical part of the powertrain matching. At first, the power components were selected according for the power components selection were presented. The energy management for the hybrid electric vehicle (HEV) was a kinematic characteristics of the PGS were analyzed and the differential equations for the powertrain were constructe optimizing the characteristic parameter of the PGS. The result showed that there was a functional relationship among velocity and the maximum speed of all the power components. The simulation was conducted in the ADVISOR and the anal reasonable. And the optimization method was validated.