

考虑油门开度快速变化的自动变速器换挡控制策略 AMT Shift Control Strategy Based on the Fleetness Changing of the Gas Pedal Aperture

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关键词: 自动变速器 油门开度变化率 换挡 控制策略

摘要: 在机械自动变速器三参数(油门开度、车速、加速度信号)换挡控制中,汽车惯性大会引起汽车车速响应速度相对于油门开度变化的滞后,在油门开度变化率比较大的情况下易出现频繁换挡现象。本文将油门开度变化率作为输入参数,提出了换挡四参数模糊控制方法。同时针对四参数模糊控制输入参数多、模糊规则多的问题,提出了双模糊四参数控制器方法,减少了模糊规则的数量,提高了处理器的运行能力。仿真结果验证了控制策略的正确性。

Using three parameters (the change of accelerator aperture, the vehicle speed, the accelerator) shift control in AMT vehicle, the vehicle speed response lagged to the change of accelerator aperture for the large inertia of the automobile, and the phenomenon of shifting frequently occurred when accelerator aperture varied extensively. The fuzzy control method was proposed on the base of three parameters into which the change of accelerator aperture was added. Meanwhile, aimed at the problem of excessive input parameter and rule, the method of double fuzzy rule was proposed which reduced the amount of rule, improved the processor operation ability. The simulation results verify the validity of control strategy.

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