



DRIVING RESISTANCE FACTOR CALCULATING METHOD FOR PARALLEL-SERIAL HEV

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Abstract- HEV's energy control strategy cannot be regulated perfectly according to the variable working condition, because the driving resistance is difficult to measure and calculate during the driving process. By taking parallel-serial HEV which power coupling mechanism is planet-gear as research object, analyzed planet-gear power coupling mechanism's dynamics characteristic and efficiency characteristic, put forward driving resistance factor's concept and measure-calculating methods. The factor can be used to evaluate HEV's driving resistance under different load and road gradient condition. The experiment results show that the maximum relative error of driving resistance factor's average value between theory calculating and experiment testing is 6.36%,

which is found in the large driving resistance working condition that the vehicle load is 305 kg, the road gradient is 5.2495°.

Index terms: Hybrid electric vehicle, planet gear, driving resistance factor, calculating method.