Research on Testing Platform Based on Electric Driven Digital Twin Model㊀

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Abstract: In order to solve the problem that multiple system integration tests cannot be carried out due to the lack of electric drive systems in the early stage of vehicle development, a virtual reality combination test scheme based on the digital twin model of electric drive systems was proposed, and a method for constructing the digital twin model of electric drive systems was presented. The calculated and measured values of the digital twin model of water outlet temperature of electric drive systems under different operating conditions were compared, with a maximum error of only 4.7%. This digital twin model has the characteristics of accuracy, efficiency, and stability. Based on this model, multiple system integration virtual reality integration testing can be completed in the absence of an electric drive system, and vehicle thermal management performance can be evaluated at the early stage of vehicle development.

Key words: digital twin model, virtual reality combination test, integration test, response surface model

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