The study on cockpit platform design and its application on collision avoidance control

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ABSTRACT

This thesis is to replace driver model by using cockpit simulator by human and to build a vehicle model for a real car in CarSim. After that a collision avoidance system is developed, different algorithms are compared to see which one is applicable in emergency matter. Vehicle simulation software always runs the same driver model but the driver view and reaction time are different for human. In order to bring up the factuality, we collect real car test data in ARTC then adjust simulation Mathematics. SAE J2400 standard specifies how big the pressure of deceleration reference is comfortable. Active brake tests in brake test platform with different algorithms produce different brake responses. We carry out hardware-in-the-loop (HIL) experiments collision avoidance controller with CarSim-RT, and information transfer via CAN-Bus.

Keywords : Cockpit Simulator、Active Brake、Avoidance Collision Controller、HIL

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