# A study of pedal travel and brake pressure control for brake by wire system


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**ABSTRACT**

In this study,the self-assembled SBC brake by wire system is used to connect with pressure stability control system and a vehicle model is built for the experimental car in CAMSIM RT. In the part of the controller,we use the vehicle model of CARSIM as a control object and via Simulink build a controller to control the four-wheel pressure.Then we can find the best membership functions of the fuzzy controller by using the genetic algorithm(GA).In this experiment,the first thing is to build the structure of pressure controller with CARSIM.After developing the pressure controller,it is connected to CARSIM RT and SBC braking system for doing the Hardware in the Loop(HIL) simulation to verify the stability of the pressure controller. In the HIL experiment,we first measure the environment data by CARSIM RT and after that we use it to generate the braking control signals.Through CAN BUS,these signals are sent to the SBC brake by wire system.After controlling the pressure by the SBC brake by wire system,the pressure signals are sent back to CARSIM RT by CAN BUS.Then we can use these data to analyze the influence of braking pressure of the car.



Keywords : Pressure controller ; Fuzzy controller ; Hardware in the Loop


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