Vibration reduction strategy should be investigated considering cost and performance of transfer pass modification and vibration source control. Passenger car engine torque control measures, e.g., fuel, spark advance and intake air, have constraints. Effect of transfer pass modification and engine control measures are analyzed. Overall performance was investigated with a virtual vehicle consists of multi-body vehicle model and controlled-engine model.

HILS (Hardware-in-the-Loop Simulation), a scheme that incorporates hardware components of primary concern in the numerical simulation environment, is being widely used in automotive industries as test benches for vehicle control units. Developed in this study is a HIL simulator for EHB (Electro-Hydraulic Brake) systems that includes independent brake pressure control system. An EHB control logic was developed and tested in the HILS system. Test results under various driving conditions are presented.

This paper presents a real-time multi-vehicle simulator with an initial delay. The main focus of the developed simulator is to show any effects of different vehicle dynamics or different controllers on the platoon stability. For this heterogeneous multi-vehicle simulation, a detailed powertrain model, a detailed brake model, and several kinds of longitudinal controllers are implemented in the developed simulator. A network configuration connecting individual vehicle simulators via TCP/IP is adopted for real-time simulation and a simple wait-and-go algorithm is used for dealing with a random transfer delay, which results in just an initial delay.