

## **Development of Active Bogie-Steering System to Improve Curving Performance**

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This paper presents an active steering system to ensure both the curving performance and the high-speed running stability of the vehicle. The proposed system is so configured as to detect the curves by the gyroscopes mounted on the vehicle and to generate a yaw moment between the carbody and the bogie with the hydraulic actuators to replace the existing yaw dampers. This configuration enables the reduction of the wheel/rail lateral force with a small additional mounting space without requiring complicated mechanical links in the bogies. The actuators also work as passive yaw dampers during the high-speed running to ensure the running stability. A test vehicle equipped with the developed steering system was made to run on a test track. The result shows that the active steering reduced the lateral force of the outer wheel of the front axle in the circular curve by about 60% on average as compared with the inactive steering.