

Improvement of Response Performance of Pneumatic Servo System for Tilting Control

Akihito KAZATO Shogo KAMOSHITA

In Japan, a tilting system to tilt the vehicle body with pneumatic power is adopted. However, this tilting system has a problem to cause motion sickness, which is due to delay in tilting on transition curve tracks and unstable rolling motion on straight tracks. To prevent motion sickness, improvement of the performance of the current tilting system with pneumatic power was examined by a numerical simulation. As a result, the following conclusions were obtained. First, the proposed model of pneumatic servo control system was able to represent the behavior of the tilt actuator. Second, the proposed system with a flow control valve had a higher level of response and more power than the current system with a pressure control valve.