Robust Cruise Control and Active Suspension System for the High Speed Train

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ABSTRACT

High speed train is a vehicle system which can be operated at least 200 km/hr. To make sure the safety and comfort at such high speed, the automatic train controller is needed to control and monitor the HST system. In Taiwan, the curved track is unavoidable due to the mountainous topography; thus the stability of the control system is very important. The control system of high speed train can be classified into three systems such as: the motion-planning system, the cruise control system and the active suspension system. In this paper, the cruise control system and active suspension system are studied; finally, the proposed controller is validated in the simulations of the simplified HST model and the whole train model of ADAMS.

Keywords : HST, Cruise Control, Active Suspension System, Sliding control, Automatic train control

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