

MP-SMC-I Method for Slip Suppression of Electric Vehicles under Braking

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Abstract : In this paper, a new SMC (Sliding Mode Control) method with MP (Model Predictive Control) integral action for the slip suppression of EV (Electric Vehicle) under braking is proposed. The proposed method introduce the integral term with standard SMC gain , where the integral gain is optimized for each control period by the MPC algorithms. The aim of this method is to improve the safety and the stability of EVs under braking by controlling the wheel slip ratio. There also include numerical simulation results to demonstrate the effectiveness of the method.

Keywords : sliding mode control, model predictive control, integral action, electric vehicle, slip suppression

Conference Title : ICICRA 2015 : International Conference on Intelligent Control, Robotics and Automation

Conference Location : Rome, Italy

Conference Dates : September 17-18, 2015