

## عنوان مقاله:

Robust Velocity Tracking of High Speed Train via Sliding Mode Control

## محل انتشار:

سومین کنفرانس بین المللی پیشرفتهای اخیر در مهندسی راه آهن (سال: 1392)

تعداد صفحات اصل مقاله: 8

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## خلاصه مقاله:

This paper studies application of sliding mode control (SMC) for robust velocity control of high speed train (HST) in the presence of parametric uncertainties and external disturbances. First, a state feedback SMC law is designed to drive the tracking error to a positively invariant set that contains the origin. It is shown that under suitable conditions, command tracking and disturbance rejection could be achieved simultaneously. A conditional integrator is incorporated in design procedure, leading to chattering elimination in control input while recovering ideal sliding mode performance. In fact, this modification provides servocompensation only inside a predetermined boundary layer; achieving asymptotic output regulation, but with improved transient performance. The design is performed for Distributed Driving (DD) trains. Numerical simulations have been carried out to verify the effectiveness of the controller. The simulation results show that good velocity tracking performance is achieved, in spite of partial knowledge of the system parameters.

## کلمات کلیدی:

(High Speed Train (HST), velocity control, Sliding Mode Control (SMC

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/210693>

