

## عنوان مقاله:

Nonsingular Fast Terminal Sliding Mode Control for Stabilization of a Magnetic Ball Suspension System with Unmatched Uncertainty

## محل انتشار:

هفدهمین کنفرانس ملی دانشجویی مهندسی برق ایران (سال: 1393)

تعداد صفحات اصل مقاله: 6

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## خلاصه مقاله:

In this paper, a fast terminal sliding mode algorithm is considered for design of the sliding mode control for single-input single-output nonlinear uncertain magnetic ball levitation system. A scheme of static sliding mode control is addressed in this work. Because of existence extreme nonlinearity behavior and chattering problem, a fast terminal sliding mode control algorithm is designed. Also in through comparative simulations, it is shown that the considered controller with fast sliding surface outperforms NTSMC controller is able to adjust the time of reaching phase without chattering in the control input signal. Numerical simulations are presented in this paper to evaluate the analysis and effectiveness of the controller. The proposed controllers guarantee the finite time regulation and stability of the states of the system to their desired values. Robustness of the control schemes in the presence of uncertainty is also investigated

## کلمات کلیدی:

fast terminal sliding mode control; magnetic ball levitation system; finite time convergence; uncertainty; Robust control.

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/1605052>

