

Continuous nonsingular terminal sliding mode control for systems with mismatched disturbances.

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Continuous nonsingular terminal sliding mode control for systems with mismatched disturbances $\hat{\alpha}^{\dagger}$

Jun Yang ^a ... Xinghuo Yu ^b

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Abstract

A continuous nonsingular terminal sliding mode control approach is proposed for mismatched disturbance attenuation. A novel nonlinear dynamic sliding mode surface is designed based on a finite-time disturbance observer. The time taken to reach the desired setpoint from any initial states under mismatched disturbance is guaranteed to be finite time. In addition, the proposed method exhibits the fine properties of nominal performance recovery as well as chattering alleviation.



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Keywords

Nonsingular terminal sliding mode; Finite-time disturbance observer; Mismatched disturbance

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¹ Tel.: +86 25 83793785; fax: +86 25 57712719.

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