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عنوان مقاله:

Nonlinear Full-Vehicle Model Control Using Magnetorheological Damper

محل انتشار:

هفتمین کنفرانس بین المللی مهندسی برق ،الکترونیک و شبکه های هوشمند (سال: 1401)

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خلاصه مقاله:

This paper presents the semi-active control of vehicle suspension system utilizing magnetorheological damper while nonlinear and full model of vehicle is taken into account. To do this aim, four dampers are utilized in four tires suspension system and Modified Bingham plastic mode is utilize to model the dynamical behaviors of dampers. Sky-hook control scheme, with minimum or maximum input current to the MR damper depending on the relative velocity between the sprung and unsprung masses is considered here. The obtained results revealed that presented control strategy changes the chaotic response of vehicle to harmonic one. The results of semi-active control strategy is compared with constant control and it is shown that, the semi-active control strategy is superior to the constant control strategies with minimum or maximum input current to the MR damper.

کلمات کلیدی:

Control of Vehicle, Magnetorheological Damper, Nonlinear Model.

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