Abstract

The attitude control of missiles, spacecraft and satellites is essential; in order to remain them fixed in space to perform their missions accurately. The attitude equation of a satellite is a six-dimensional nonlinear system which includes some types of nonlinear behavior such as periodic trajectory, chaotic dynamics. In this paper, a sliding mode control design method for stabilization of the attitude chaotic satellites with unknown inputs and uncertainties. Using Lyapunov theory, the stability control system is proven. Simulation results show that the proposed controller can be chaotic satellite attitude in the presence of unknown inputs and uncertainties will converge to the unstable equilibrium points.

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Attitude Control of Chaotic Satellite with Unknown Input and uncertainties based on Sliding Control

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