

عنوان مقاله:

Using predictive Control Algorithms to Wind Disturbance Rejection in XY pedestal

محل انتشار:

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خلاصه مقاله:

In this paper, designing of a predictive controller for the elimination of the wind disturbance over the XY pedestal is investigated. XY pedestal is a two-degree-of-freedom groundstation antenna which is related to the HDF pedestals (High Dynamic Full Motion Leo Satellite Tracking Pedestals). This system model is achieved by using the Dymola software. According to the comparisons, this model is very close to the actual system model with high accuracy. Purpose: is to trace a LEO orbit satellite, that of passing satellites and angles related to the antenna have been extracted path from KNTUSAT software. For simulating the wind disturbance model the Davenport filter was used. In simulations, the operation of PI controller has been optimized and Model Predictive Controller (MPC) and Generalized Predictive Controller (GPC) has been studied. The results of comparison between simulation methods shows that predictive controller has had less error in satellite tracking and has been shown less controlling effort and also has had good behavior in eliminate wind disturbance.

کلمات کلیدی:

Satellite earth Station, XY Pedestal, Predictive Control, MPC, GPC, PI Optimized, Wind Disturbance, Davenport Filter

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