عنوان مقاله:

Robust Control of a Quadrotor using EKBF State Vector Estimation

محل انتشار:

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نویسندگان:

Raziyeh Babaie - *Department of Electrical Engineering, Imam Khomeini International University, Qazvin, Iran*

AMIRfarhad ehyaei - *Department of Electrical Engineering, Imam Khomeini International University, Qazvin, Iran*

خلاصه مقاله:

This paper presents the design of a nonlinear controller for trajectory tracking of a quadrotor helicopter based on sliding mode control technique (SMC). The proposed control method is characterized by its robustness against disturbances and aerodynamic effects. One of the main goals of this study is to develop a nonlinear observer based on extended kalman bucy filter (EKBF) to estimate unmeasured states of the system. In order to optimize the parameters in the proposed method, the paper utilizes the genetic algorithm. Finally, simulation results indicate that quadrotor UAV with the proposed controller ensures good tracking of a desired trajectory and its robustness against aerodynamic effects.

کلمات کلیدی:

Quadrotor, Sliding Mode Control, Genetic Algorithm, State Estimation, Extended Kalman Bucy Filter