

Analysis of UAV state estimation modeling based on AHRS and INS configurations

ABSTRACT

State estimation for unmanned aerial vehicle is one of the important components in autonomous UAV. There are several techniques and algorithms used in estimating UAV states depend on the applied sensors. Inertial measurement unit (IMU) based attitude heading and reference system (AHRS) and complete inertial navigation system (INS) are the common navigation sensors used for UAV today. The differences between these two configurations in estimating UAV states are analyzed in this paper using state estimation modeling in Matlab environment. The results are displayed through UAV position and attitude graphs.

Keyword: State estimation; UAV; INS; AHRS