

Abstract

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DYNAMIC MODELING and CONTROL OF QUADROTOR VEHICLE

The control of Unmanned Aerial Vehicles (UAVs) is a very challenging field of research especially for Vertical Take-Off & Landing (VTOL) vehicles aircrafts for their numerous advantages over the traditional airplanes; due to the rapid advances that were made in this field with the development of light weight Micro-Electromechanical System (MEMS) sensors it has become possible to build an autonomous model for a light weight quadrotor; to develop various controls for it. This paper focuses on the mathematical model of a quadrotor vehicle. A CAD model has been built for estimating mass & inertial properties of the physical model. Finally a PID controller for the proposed model is introduced then a Simulink model has been implemented for estimating the response of flight dynamics.