## PID Control of Quad-Rotor Unnamed Vehicle Based on Lagrange Approach Modelling

Authors : A. Benbouali, H. Saidi, A. Derrouazin, T. Bessaad

**Abstract :** Aerial robotics is a very exciting research field dealing with a variety of subjects, including the attitude control. This paper deals with the control of a four rotor vertical take-off and landing (VTOL) Unmanned Aerial Vehicle. The paper presents a mathematical model based on the approach of Lagrange for the flight control of an autonomous quad-rotor. It also describes the controller architecture which is based on PID regulators. The control method has been simulated in closed loop in different situations. All the calculation stages and the simulation results have been detailed.

Keywords : quad-rotor, lagrange approach, proportional integral derivate (PID) controller, Matlab/Simulink

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