

Backstepping control law application to path tracking with an indoor quadrotor

This paper presents an application of the backstepping control to a path tracking mission using an indoor quadrotor. This challenging study case starts on modelling the quadrotor dynamic in order to design a backstepping control which we applied directly to the Lagrangian dynamics equations. The backstepping control is chosen due to its applicability to this class of nonlinear and under-actuate system. To test the designed control law, a complete quadrotor model identification was performed, using a motion capture system. The procedure used to obtain a good model approximation is presented. Experimental results illustrate the validity of the designed control law, including rich simulations and real indoor flight tests.