



Faculty of
Science and
Technology
Tokushima University

Unmanned Aerial Vehicle Control System

Associate Professor Masafumi, Miwa



Arbitrary Attitude Hovering Control



Inverted Bicopter
Using Thrust Vectoring



Aerial / Under Water Vehicle



Multicopter Operation
by COG Shift



Attitude Control of
Manned Multicopter

Content:

The performance of UAV (unmanned aerial vehicle) is improving by the performance gain of MEMS sensors, magnet, and battery technology. UAV takes the place of the real aircraft in proportion to improve the flight control technology. Because, the operation cost of the R/C single helicopter is lower than the actual one. In addition, required heliport size is smaller than that of actual one.

However, there is a possibility of accidents such as contact and crashed due to maneuver or operation error. Moreover, rotor and propeller as thrust device are dangerous in such case. So we have been conducting research and development on thrust vectoring technology to operate UAV safely.

Currently, we present a tilt-rotor multicopter, inverted bicopter using thrust vectoring to improve UAV safety

Additionally, we study about the operation of multicopter by the center of gravity shift of the humanoid robot on it in order to develop a new personal mobility based on multicopter technology, also aerial / under water vehicle.

Keywords : <UAV, Thrust vectoring, External control>

E-mail: <miw@tokushima-u.ac.jp>

Tel. +81-88-656-7387

Fax: +81-88-656-9082

HP : <http://me.me.tokushima-u.ac.jp/~miw>