

Concept and Design of a Biomimetic Single-Wing Micro Aerial Vehicle (MAV)

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Abstract : In this first paper, the different concepts and designs to build a single-wing MAV are discussed. Six scratch-building prototypes using three different designs have been tested regarding sufficient lift and weight distribution, of which various configurations were explored. Samare prototypes achieved wireless control over the motor and flap whilst obtaining data from the IMU, though obtaining an increase in lift was the key issue due to insufficient thrust. The final prototype was able to demonstrate an improvement in weight distribution.

Keywords : SAMARE, micro aerial vehicle (MAV), unmanned aerial vehicle (UAV), mono-copter, single-wing, mono-wing, flight control, aerofoil, lift

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