

Aerodynamic Design an UAV and Stability Analysis with Method of Genetic Algorithm Optimization

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Abstract : We seek to develop a UAV for agricultural spraying at a maximum altitude of 5000 meters above sea level, with a payload of 100 liters of fumigant. For the developing the aerodynamic design of the aircraft is using computational tools such as the "Vortex Lattice Athena" software, "MATLAB", "ANSYS FLUENT", "XFoil" package among others. Also methods are being used structured programming, exhaustive analysis of optimization methods and search. The results have a very low margin of error, and the multi-objective problems can be helpful for future developments. Also we developed method for Stability Analysis (Lateral-Directional and Longitudinal).

Keywords : aerodynamics design, optimization, algorithm genetic, multi-objective problem, longitudinal stability, lateral-directional stability

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