

MULTIDISCIPLINARY DESIGN OPTIMIZATION APPLIED TO THE CONCEPTUAL DESIGN OF A SMALL UNMANNED AERIAL VEHICLE.

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Abstract. *The use of UAV aircraft has been increased in many sectors of society such as military defense, public security, search and rescue, remote sensing, agriculture control among others. This work develops a multidisciplinary optimization methodology to create the conceptual design of a small UAV, involving the areas of aerodynamics, structures and stability. The optimization, implemented in the commercial software modeFRONTIER, analyses several configurations, looking for an aircraft with less mass, and that meets the project restrictions. The results are compared to a previously prototype, which was established as a reference model, seeking to reduce its mass and improve their characteristics.*

Keywords: *UAV, multidisciplinary optimization, conceptual design, modeFRONTIER.*