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LOW SPEED RE-FUELLING OF UNMANNED AERIAL VEHICLES USING THE DROGUE SYSTEM

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ABSTRACT

Unmanned Aerial Vehicles (UAV) are being required to be used in more and more complex situations with larger payloads for extended periods of time. Increasing the expectations and operating ceiling requires increased amounts fuel, that thus limits the potential payloads. This dichotomy has led to the quest for more fuel efficient UAVs; however, when designs are improved then their expectations are increased further. In manned aircraft this can be achieved by in-flight re-fuelling. This research is focused on the process of re-fuelling a UAV at low speeds and the aerodynamics considerations and problems it potentially brings. Practical conclusions to these concerns are addressed and recommendations for future research are identified.

Keywords: UAV, aerodynamics, re-fuelling.