Aerodynamic and Acoustic Design Optimization of a Multiple Propeller Combination for Distributed Electrical Propulsion

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This work aims at optimizing a large-scale wind tunnel model conceived to investigate the aerodynamic and acoustic performance of distributed electrical propulsion (DEP) on aircraft wings in high lift conditions. The aim of the optimization process is to obtain the best possible improvements in Noise and Aerodynamic performance by modifying the propellers’ layout of the Wing-DEP wind tunnel model. A multi-objective, multi-point design approach is adopted based on evolutionary computing. The robustness of the obtained solution set is also investigated. The research work is carried out in the framework of VENUS EU-funded project GA N. 886019.

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