

ANALYSIS AND TESTING OF THE COMMERCIAL AIRCRAFT WINGLETS AND INTRODUCING THE IDEA OF MULTIPLE WINGLETS

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ABSTRACT

Presented in this report is the analysis of different types of winglets for commercial aircrafts to consume lesser fuel. The winglets to be analyzed are the replica of Boeing 737's retrofitting Blended Winglet and the new Airbus A380-800's Standard Winglet. The analysis is carried out using the CFD Software – ANSYS Flotran 9.0 for lift and drag forces developed.

Mentioned types of winglets are constructed for wind tunnel testing and verify if they follow the same trend as the ones analyzed using the CFD.

Introduction to the idea of Multiple Winglets is included in the report, and the new design with Multiple Winglets will be designed for analysis then compare it's results with the previously analyzed winglets.