

Simulations of NACA 65-415 and NACA 64-206 Airfoils Using Computational Fluid Dynamics

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Abstract : This paper exemplifies the influence of the purpose of an aircraft on the aerodynamic properties of its airfoil. In particular, the research takes into consideration two types of aircraft, namely cargo aircraft and military high-speed aircraft and compares their airfoil characteristics using their NACA airfoils as well as computational fluid dynamics. The results show that airfoils of aircraft designed for cargo have a heavier focus on maintaining a large lift force whereas speed-oriented airplanes focus on minimizing the drag force.

Keywords : aerodynamic simulation, aircraft, airfoil, computational fluid dynamics, lift to drag ratio, NACA 64-206, NACA 65-415

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