

# AERODYNAMIC CHARACTERISTICS OF FLOW PAST NACA 0008 AIRFOIL AT VERY LOW REYNOLDS NUMBERS

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## Abstract

*The flow around NACA 0008 airfoil was investigated computationally at two very low values of Reynolds numbers 2000 and 6000 and for various angles of attack 0 to 8°. The flow being laminar it was seen to separate at very small angles of attack. Due to large viscous effects the pressure recovery at the trailing edge is poorer as compared to the high Reynolds number case leading to lower values of lift coefficient  $C_l$ , higher values of drag coefficient  $C_d$ , and lower values of  $(C_l/C_d)$ . The wake flow exhibits similarity behaviour similar to that in high Reynolds number flat-plate wake. The quantitative validity of the boundary layer equations in a limited range of parameters is ascertained.*

**Keywords:** Airfoil, Low Reynolds number flows, Flow separation, Boundary layer, Lift coefficient, Wake similarity, Pressure recovery

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**Paper Code: V66 N4/839-2014**