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Separation control of NACA0015 airfoil using plasma actuators DAISUKE HARADA, JUN SAKAKIBARA, Department of Mechanical Engineering,Meiji University — Separation control of NACA0015 airfoil by means of plasma actuators was investigated. Plasma actuators in spanwise intermittent layout on the suction surface of the airfoil were activated with spanwise phase difference $\varphi = 0$ or $\varphi = \pi$ in the case of dimensionless burst frequency$F^+ = 6$ and $F^+ = 0.5$ at $Re = 6.3 \times 10^4$. The lift and drag of the airfoil were measured using a two component force balance. The flow around the airfoil was measured by PIV analysis. In the condition of $F^+ = 6$ and $\varphi = \pi$ at around stall angle, which is 10 degrees, the lift-to-drag ratio was higher than that of$F^+ = 6$ and $\varphi = 0$. Therefore, it was confirmed that aerodynamic characteristics of the airfoil improved by disturbances with temporal and spatial phase difference.

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