

Abstract Submitted
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Numerical simulation of flow over a normal flat plate at low Reynolds numbers¹ DAEUN SONG, HAECHON CHOI, Department of Mechanical Engineering, Seoul National University — A normal flat plate is one of the representative two-dimensional bluff bodies. Nevertheless, there have been quite a few studies on the flow past a normal flat plate. Those studies are either restricted to very high Reynolds number by experiments, or to low Reynolds number under $Re = 1,000$ using numerical simulation. In the present study we perform numerical simulation on this flow at low Reynolds numbers ($Re = 5 - 3,000$). We show that the flow becomes unsteady at $Re \approx 35$, and three-dimensional at $Re \approx 170$. The size of the separation bubble behind the normal plate, mean and rms drag coefficients, and vortical evolution behind the plate are investigated and their results will be shown at the presentation.

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