A note on the drag reduction of a circular cylinder due to double rows of holes

Yoshio Yajima
Department of Applied Physics, Tokyo University of Agriculture and Technology, FuchuTokyo 183JapanJPN

Osamu Sano
Department of Applied Physics, Tokyo University of Agriculture and Technology, FuchuTokyo 183JapanJPN

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Simultaneous measurements of the velocity field around and the drag force on a circular cylinder placed laterally in an otherwise uniform water flow were made by means of a laser Doppler velocimeter and strain gauges, respectively. When double rows of holes were made across the diameter of a hollow circular cylinder, remarkable drag reduction was found for a fairly wide range of attack angles. It amounts to as much as 40% in comparison to a cylinder with a smooth surface in the tested Reynolds number range of (5–9)×10^3.

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