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# Experimental Measurements of Mean and Turbulence Quantities behind the Circular Cylinder by Attaching Different Number of Tripping Wires

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**Abstract :** For a bluff body, roughness elements in simulating a turbulent boundary layer, leading to delayed flow separation, a smaller wake, and lower form drag. In the present work, flow past a circular cylinder with using tripping wires is studied experimentally. The wind tunnel used for modeling free stream is open blow circuit (maximum speed = 30m/s and maximum turbulence of free stream = 0.1%). The selected Reynolds number for all tests was constant (Re = 25000). The circular cylinder selected for this experiment is 20 and 400mm in diameter and length, respectively. The aim of this research is to find the optimal operation mode. In this study installed some tripping wires 1mm in diameter, with a different number of wires on the circular cylinder and the wake characteristics of the circular cylinder is studied. Results showed that by increasing number of tripping wires attached to the circular cylinder (6, 8, and 10, respectively), The optimal angle for the tripping wires with 1mm in diameter to be installed on the cylinder is 60̊ (or 6 wires required at angle difference of 60̊). Strouhal number for the cylinder with tripping wires 1mm in diameter at angular position 60̊ showed the maximum value.

**Keywords :** wake of circular cylinder, trip wire, velocity defect, strouhal number
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