ABSTRACT

The wind tunnel is a tool to help the process analysis of air flow around solid objects. The design of wind tunnel consists of motor and fan, dimer, contraction cone and diffuser. Contraction cone is one part of a wind tunnel that affect the quality of the flow in the test section, the contraction cone design used 5th order polynomial equation are found by Bell and Mehta. 5th order polynomial equation in contraction cone able to avoid flow separation, to obtain uniformity of flow in the test section [7] . Wind tunnel that will be analyzed is the subsonic wind tunnel (M < 1) with open circuit, test section dimension is 25 cm x 25 cm, maximum wind speed in the tunnel is 7 m/s, with setting motor voltage 50 v, 70 v, 90 v, 125 v, 175 v. The average flow fluctuations on setting motor voltage 50 v is 0,0698 m/s, 70 v is 0,0278 m/s, 90 v is 0,0348 m/s, 125 v is 0,0952 m/s and 175 v is 0,0952 m/s.

Keywords : *Wind tunnel, wind Speed, subconic, polynomial, contraction cone*