

Experimental Study of Discharge with Sharp-Crested Weirs

Authors : E. Keramaris, V. Kanakoudis

Abstract : In this study the water flow in an open channel over a sharp-crested weir is investigated experimentally. For this reason a series of laboratory experiments were performed in an open channel with a sharp-crested weir. The maximum head expected over the weir, the total upstream water height and the downstream water height of the impact in the constant bed of the open channel were measured. The discharge was measured using a tank put right after the open channel. In addition, the discharge and the upstream velocity were also calculated using already known equations. The main finding is that the relative error percentage for the majority of the experimental measurements is $\pm 4\%$, meaning that the calculation of the discharge with a sharp-crested weir gives very good results compared to the numerical results from known equations.

Keywords : sharp-crested weir, weir height, flow measurement, open channel flow

Conference Title : ICFMHTME 2020 : International Conference on Fluid Mechanics and Heat Transfer in Mechanical Engineering

Conference Location : Buenos Aires, Argentina

Conference Dates : February 27-28, 2020