Geophysical Research Abstracts
Vol. 20, EGU2018-3653, 2018
EGU General Assembly 2018

Experimental Investigation of Hight Roughness On Characteristics of Hydraulic Jump

Ismaeil Kahkesh (1), Melika Fazli (2), Bijan Ghahraman (3), Kazem Esmaeili (3), and Mahmoud Shafaei Bajestan (4)

(1) Ferdowsi university of Mashhad, water engineering department, Mashhad, Iran, Islamic Republic Of (ismaeil_kahkesh@yahoo.com), (2) Ferdowsi university of Mashhad, water engineering department, Mashhad, Iran, Islamic Republic Of (fazli.m@yahoo.com), (3) Ferdowsi university of Mashhad, water engineering department, Mashhad, Iran, Islamic Republic Of (ismaeil_kahkesh@yahoo.com), (4) Shahid Chamran university of Ahwaz, water engineering department, Ahwaz, Iran, Islamic Republic(m_shafai@yahoo.com)

Hydraulic jump is a pascianating hydraulic phenomenon which discipate kinetic energy of flow. Hydraulic jump stilling basins have been constructed downstream of chutes, spillways and gates for the aporemention reason. Dimensions of this structures are depending on the jump characteristics. For economic reasons, many studies have been conducted in the past to develop criteria for jump dimensions and ways to minimia these dimensions. Among them is the use of vertical sill with in the basin. The most important variables for using sill is to select on optimum distance from the beginning of the jump. The resor thin study was conducted. In this study a total of 24 tests for Froud numbers between 5.71 to12.69 were conducted in a flome of 30cm width. During each test many parameters such on flow discharge, sequent depth, roller length, jump length and water surface profile were measured carefully. In this study the height of sill was kept constant equal to 3 cm. The results show that as to sill ristance from the jump beginning increases, the effect of sill on characteristics of jump decreases.