World Academy of Science, Engineering and Technology
International Journal of Mathematical and Computational Sciences
Vol:14, No:12, 2020

Prediction of Scour Profile Caused by Submerged Three-Dimensional Wall Jets

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Abstract : Series of laboratory tests were carried out to study the extent of scour caused by a three-dimensional wall jets exiting from a square cross-section nozzle and into a non-cohesive sand beds. Previous observations have indicated that the effect of the tailwater depth was significant for densimetric Froude number greater than ten. However, the present results indicate that the cut off value could be lower depending on the value of grain size-to-nozzle width ratio. Numbers of equations are drawn out for a better scaling of numerous scour parameters. Also suggested the empirical prediction of scour to predict the scour centre line profile and plan view of scour profile at any particular time.

Keywords : densimetric froude number, jets, nozzle, sand, scour, tailwater, time
Conference Title : ICSRD 2020 : International Conference on Scientific Research and Development
Conference Location : Chicago, United States
Conference Dates : December 12-13, 2020