

Study of oscillating characteristics of the hydraulic jump (Case of type B forced jump with negative step in a rectangular channel with variable slope)

It is well known that one of the objectives for the design of stilling basins is to ensure that the hydraulic jump is not displaced out of these basins. This would require the determination of the rising water level, a sufficient length of the pool, and obtaining a flow with appropriate velocity by appropriate means

Based on the analysis of various work and experimental studies, the classic hydraulic jump has shown many disadvantages, that's why workers thought of structural details to minimize as much as possible these disadvantages.

The majority of this work shows that the negative step is used to stabilize and clarify the hydraulic jump. But these studies were generally devoted to channels with zero slope. The stilling basins location on severe slopes remains constantly a focus and also an important goal.

Therefore, in this work, we propose to make an experimental analysis of kinematics and physical characteristics of a hydraulic jump type B with negative step into a small-scale model of a rectangular channel with variable slope.