

Numerical analysis of behaviour of alternate bars in the channel with oblique weir

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(a) Purpose of study or research hypothesis

The effects of changes in flow on the installation angle of weir and on the downstream of weir were studied.

(b) Key issue(s) or problem(s) addressed

Be installed perpendicular to the flow in order to prevent corrosion on the straight section of the beam. However, depending on the topographic characteristics of the subduction and the purpose of the installation, some places are not installed perpendicular to the flow. As a result, the flow was concentrated or distributed downstream, causing the riverbed to be changed.

(c) Methodology or approach used

In this study, the applicability of the 2-dimensional numerical model was reviewed through comparison with the results of an indoor experiment, and the change in flow characteristics and the behavior of bars were quantitatively analyzed at the upstream and downstream of weir according to the change in the installed angle of weir.

(d) Results or conclusions derived from the project

As the length of an dimensionless weir increased, the refraction angle of the flow increased, and the dimensionless flow decreased. In the upper part of the beam, sediment was deposited at the end of the backwater formed by the weir, and the delta developed and moved downstream. Delta's speed of travel decreases as it nears weir and increases in size.

(e) Implications of the project relevant to congress themes

The results of this study are thought to be used to predict the change in the topography of the stream by the flow changed by the weir.

Keywords : Oblique weir, Numerical simulation, Bar length, Bar height