

THE VARIATION OF CHANNEL BED BY INSTALLING PIER AT THE CHANNEL JUNCTION

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Natural streams consist of a very complex network as junction or separation. At the junction the hydraulic characteristics are varied through the velocity and water elevation. When the hydraulic structures were constructed in those kinds of area, there were not any considering of hydraulic analysis, and they caused of flooding or destruction of structures.

In this paper, the variation of bed elevation, which is one of the complex hydraulic characteristics at channel junction was analyzed through the discharge ratio and installing the pier near 60°, 75°, 90° channel junction

As increasing the approaching angle, the depth and influenced length of erosion is increasing but the slope of the erosion is decreased.

Installed pier through cross the channel, the scour depth is deeper at the acceleration zone but other area where are both side of channel wall the scour depth is less than straight channel. In addition the approaching angle is increasing the scour depth is deeper, which is 2 times deeper than 60 degree channel junction by 90 degree channel junction.

Compared with the equation, 60 degree of channel junction is almost same as C.S.U. equation but as increasing the approaching angle the discrepancy between calculated and measured scour depth is bigger. Because the equations are not considered the approaching angle. So it is more carefully designed the position of pier.

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