

The Stability of Arc-Shape Sediment Degradation Control Structure — Case Study in the Creek of the Tin-Chi-Lan-Kan Watershed

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Arc-shape sediment degradation control structure is utilized its arc to direct center of the flow to rear deep pool, and dissipate the flow energy there. In this way, this kind of structure may be a habitation zone in low flow and an energy dissipation structure in the high flow. A case study in the physical model of the Tin-Chi-Lan-Kan Creek located in Taipei County, Taiwan is chosen for semi-movable bed experiment. The experiments are conducted to investigate the arrangement of sediment degradation control structure and the connection types of the gravel which form the arc when encountering flood of 5 yr. return period. The cases of gravel fixed and not fixed on the bed are also tested. In the case of gravel on the sediment degradation control structure was connected and was fixed on the bed, the scouring was the least compared to other cases. (Fig.1) These results can provide a reference for the layout of arc-shape sediment degradation control structure.