عنوان مقاله:

Plunge pool scour in prototype and laboratory

محل انتشار:

کنفرانس بین المللی هیدرولیک سدها و سازه های رودخانه ای (سال: 1383)

تعداد صفحات اصل مقاله: 10

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خلاصه مقاله:

Scour is a major concern with flip buckets in hydraulic engineering, given the several serious incidents over the past 50 years. The present research is based on previous laboratory observations conducted at VAW, ETH-Zurich, Switzerland, to explore the effect of cross-sectional jet shape, the effect of tailwater jet submergence and the jet impact angle on the plunge pool scour features. All observations were conducted in a sediment bed. It was observed that the maximum scour depth may be significantly larger for so-called dynamic flow conditions than for static conditions when the jet action has seized. This was attributed to large dynamic forces with a twofold effect: (1) Suspension of sediment by the highly turbulent flow, and (2) Steeper scour hole slopes as compared with the natural angle of repose. The following thus intends to relate the static end scour depth to the maximum dynamic scour depth in order to allow prediction of the effective scour maximum for prototype conditions

کلمات کلیدی: