

Reliability Assessment of Various Empirical Formulas for Prediction of Scour Hole Depth (Plunge Pool) Using a Comprehensive Physical Model

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Abstract : In this study, a comprehensive scouring model has been developed in order to evaluate the accuracy of various empirical relationships which were suggested for prediction of scour hole depth in plunge pools by Martins, Mason, Chian and Veronese. For this reason, scour hole depths caused by free falling jets from a flip bucket to a plunge pool were investigated. In this study various discharges, angles, scouring times, etc. have been considered. The final results demonstrated that the all mentioned empirical formulas, except Mason formula, were reasonably agreement with the experimental data.

Keywords : scour hole depth, plunge pool, physical model, reliability assessment

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