Comparison of Selected Pier-Scour Equations for Wide Piers Using Field Data

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Abstract : Current methods for predicting local scour at wide bridge piers, were developed on the basis of laboratory studies and very limited scour prediction were tested with field data. Laboratory wide pier scour equation from previous findings with field data were presented. A wide range of field data were used and it consists of both live-bed and clear-water scour. A method for assessing the quality of the data was developed and applied to the data set. Three other wide pier-scour equations from the literature were used to compare the performance of each predictive method. The best-performing scour equation were analyzed using statistical analysis. Comparisons of computed and observed scour depths indicate that the equation from the previous publication produced the smallest discrepancy ratio and RMSE value when compared with the large amount of laboratory and field data.