

## Predicting Bridge Pier Scour Depth with SVM

**Authors :** Arun Goel

**Abstract :** Prediction of maximum local scour is necessary for the safety and economical design of the bridges. A number of equations have been developed over the years to predict local scour depth using laboratory data and a few pier equations have also been proposed using field data. Most of these equations are empirical in nature as indicated by the past publications. In this paper, attempts have been made to compute local depth of scour around bridge pier in dimensional and non-dimensional form by using linear regression, simple regression and SVM (Poly and Rbf) techniques along with few conventional empirical equations. The outcome of this study suggests that the SVM (Poly and Rbf) based modeling can be employed as an alternate to linear regression, simple regression and the conventional empirical equations in predicting scour depth of bridge piers. The results of present study on the basis of non-dimensional form of bridge pier scour indicates the improvement in the performance of SVM (Poly and Rbf) in comparison to dimensional form of scour.

**Keywords :** modeling, pier scour, regression, prediction, SVM (Poly and Rbf kernels)

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