



Multiple regression, ANN (RBF, MLP) and ANFIS models for prediction of swell potential of clayey soils

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In the recent years, new techniques such as; artificial neural networks and fuzzy inference systems were employed for developing of the predictive models to estimate the needed parameters. Soft computing techniques are now being used as alternate statistical tool. Determination of swell potential of soil is difficult, expensive, time consuming and involves destructive tests. In this paper, use of MLP and RBF functions of ANN (artificial neural networks), ANFIS (adaptive neuro-fuzzy inference system) for prediction of S% (swell percent) of soil was described, and compared with the traditional statistical model of MR (multiple regression). However the accuracies of ANN and ANFIS models may be evaluated relatively similar. It was found that the constructed RBF exhibited a high performance than MLP, ANFIS and MR for predicting S%. The performance comparison showed that the soft computing system is a good tool for minimizing the uncertainties in the soil engineering projects. The use of soft computing will also may provide new approaches and methodologies, and minimize the potential inconsistency of correlations.