Estimation of suspended sediment concentration in the Wei river basin using machine learning approaches

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The correct estimation of the suspended sediment concentration of Wei river basin is important for its water resource management. However, it's a hard task due to the complexity of the generation and transportation process. In this Study, three machine learning approaches, namely, multiple linear regression (MLR), artificial neural networks (ANNs) and support vector machine (SVM) was applied for estimating the suspended sediment concentration in six stations in Wei river basin. The flow and sediment data from 2010∼2016 were used to train and test the proposed models. The model was compared with in term of coefficient of determination, mean absolute error, coefficient of residual mass and variance accounted for. The comparison results indicated that the SVM is superior to the MLR and ANN models in estimating suspended sediment concentration of Wei river basin.