Abstract

Although Artificial Neural Networks have been used for many years, its use in air pollution analysis has become widespread in 10 years. In this study, an Artificial Neural Network model was proposed to predication air pollution in Kastamonu province of Turkey. In this study as an example of Kastamonu province, Artificial Neural Network model was formed by using a pollution parameter (PM10) and 5 different meteorological factors (air temperature, air pressure, humidity, wind direction and wind speed) which were measured daily data during (2015-2018) period. It is aimed to propose refined model to predict the value of air pollution concentration (SO2) after 24 hours by using this model. In other words, the air quality model is predicted. Artificial Neural Network is very successful compared to the new and classical statistical methods. Feed back-propagation algorithm has been used in all developed Artificial Neural Network model. The data set used in this study is divided into three subsets including training, validations and test data sets. The first 70% percent of the data set were used as the training subset, 15% of the data set used as the test set and 15% of the data set were used in validation set. The Mean Square Error (MSE) was measured for the performance of the network. It was
observed that the developed ANN model was in agreement with the experimental results.

References


Index Terms

Computer Science

Artificial Intelligence
Keywords

Artificial neural networks, feed back-propagation algorithm, air pollution, Kastamonu.