

Input Data Balancing in a Neural Network PM-10 Forecasting System

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Abstract : Recently PM-10 has become a social and global issue. It is one of major air pollutants which affect human health. Therefore, it needs to be forecasted rapidly and precisely. However, PM-10 comes from various emission sources, and its level of concentration is largely dependent on meteorological and geographical factors of local and global region, so the forecasting of PM-10 concentration is very difficult. Neural network model can be used in the case. But, there are few cases of high concentration PM-10. It makes the learning of the neural network model difficult. In this paper, we suggest a simple input balancing method when the data distribution is uneven. It is based on the probability of appearance of the data. Experimental results show that the input balancing makes the neural networks' learning easy and improves the forecasting rates.

Keywords : artificial intelligence, air quality prediction, neural networks, pattern recognition, PM-10

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