Abstract:
Arid Regions covered about 40% of world and are contain many people. Dust storms are most common natural events in these areas that threaten no health and fund in these areas but the entire world. Recently, artificial intelligence techniques become more usable in many fields and their ability in modeling of complicated processes that are not well explored. In present study two artificial intelligence techniques utilized for dust storm prediction in Zabol Area. A 25 years period of climatic records were used. We classified dust events in two classes based on visibility. Doing Gamma Test indicate best arrangement of inputs for model construction. Models have made using selected parameters and their efficiencies compared via contingency table. Finally uncertainty and sensitivity analysis carried out. Results show that presented classification is stronger in all models and more severe events are more attainable in prediction. Support Vector Machines (SVMs) have best efficiency (CSI=0.52) and Artificial Neural Networks (ANNs), Local Linear Regression (LLR) and Stepwise Regression, respectively. Uncertainty and sensitivity is very high in SVMs, whereas ANNs are less sensitive and uncertain. However more attempts are necessary in dust storm identification.