A Study on Fog Forecasting Methods through Data Mining Techniques in Jeju

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The occurrence of fog can significantly impact on the safety of drivers and the road condition. As an attempt to improve the fog predictability in Jeju, we perform machine learning to use various data mining techniques like Tree Models, Conditional Inference Tree, Random Forest, Multinomial Logistic regression, Neural Network and Support Vector Machine. To validate the performance of machine learning models, simulation results are compared fog data observed over the Jeju(184 ASOS site) and Gosan(185 ASOS site). Predictive rates proposed by six kinds of data mining methods are all above 92% at two region. In addition, we validate the performance of machine learning models to use WRF model meteorological outputs, it is still not good enough for operational fog forecast. According to model assesment used metrics from confusion matrix, it can be seen that the fog prediction of Neural Network is most effective.