Linear Regression Based Lead Seven Day Maximum and Minimum Air Temperature Prediction in Chennai, India

Abstract:

The surface temperature is the key determinant for vegetation, animals and human livelihood in a particular location of earth. Timely prediction of minimum and maximum temperature will help in planning and governing very hot and very cold climate. In this study numerical weather parameters based lead seven day minimum and maximum temperature prediction models using multiple linear regression is developed at the location Chennai, India. The result of the analysis states that regression based minimum temperature prediction models provide better accuracy than maximum temperature forecast models with the highest R2 and lowest MAE, RMSE in independent test dataset. The analysis also emphasizes that the prediction performance is good at smaller lead days and it decreases gradually to higher lead days for both minimum and maximum temperature.