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TIME SERIES ANALYSIS OF WIND SPEED AND TEMPERATURE IN TIRASPOL, MOLDOVA

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Abstract

This research analyses time series of air temperature and wind speed. Trends and periodical components are defined for both time series with no significant statistical relationship between them. The spectral analysis of temperature series with no trends shows the peak frequency $f_c = 1/12$, corresponding to a seasonal periodical component. The graph of the spectral density function of the wind speed time series does not manifest a seasonal periodic component. Forecasting of both time series is carried out using exponential smoothing with a moving average and an ARIMA model. Prediction for 2012 is computed using a multiplicative approach based on Winters and ARIMA models.

Key words: ARIMA models, autocorrelation, temperature, time series, wind speed

Received: September, 2012; Revised final: December, 2012; Accepted: December, 2012

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