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GLOBAL TEMPERATURE CHANGE: NEW TREND PREDICTION AND ANALYSIS OF INFLUENCING FACTORS

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Abstract

Global warming has become a matter of concern as maximum temperatures in many parts of the world continue to set new historical records. Based on the global monthly average temperature data from 1750 to 2022, we use the gary forecast, ARIMA, and BP neural network model, respectively, to forecast the global temperature trend and compare the forecast results of different models. Besides, we use the Analytic Hierarchy Process to analyze the main influencing factors of the intensification of climate change and discuss the effects of different factors on global warming. We find that the temperature outlier for March 2022 is higher than any previous data, and the BP neural network model has the best fitting effect on global temperature change prediction. Human factors and some episodic natural factors impact global temperature change, and human factors may be the main cause of global warming. The results reveal that governments should pay attention to abnormal climate change and take measures to curb the role of human activities in promoting global warming. Otherwise, it could be more conducive to future sustainable development.

Key words: global warming, influencing factors, prediction, temperature change

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