University of Zabol
College of Natural Resources
Environment group

Master's thesis in the field of environment, land allocation trend
thesis title

Exponential micro-scale and reduction of the output error of general atmospheric circulation climate models to investigate the future climate changes of Sistan and Baluchistan province with a general approach

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Abstract

According to the research of the International Panel on Climate Change (IPCC), middle latitudes, including Iran, are expected to witness an increase in temperature and evaporation and a decrease in rainfall due to climate change. Analyzing atmospheric climate models and ensuring the accuracy of their results provides the possibility for decision makers and policy makers to have sufficient information in policy making, disaster management and infrastructure planning. Therefore, in this research, the climatic parameters under the SSP4 scenario in the future period were predicted and micro scaled. Also, the power of climate models in simulating climate parameters was investigated and the best models were selected. The results showed that none of the climate models are able to simulate rainfall in the region. Also, MPI, EC-EARTH, CNRM and CMCC models were the best models in simulating temperature in this research, although other models also showed high correlation and little bias compared to observational data (temperature). The highest periods of temperature increase predicted by climate models in the future are for temperatures of more than 3°C and for at least 2.3°C. In the end, it should be mentioned that predicting the amount of climate change in the future provides the possibility for decision makers and policy makers to have sufficient information and make appropriate decisions in policy making, disaster management and infrastructure planning.

Key words: climate change, micro scale, sixth report models