
Proposal of a statistical methodology to choose the representative CMIP6 models' daily maximum temperature

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Abstract

In this study, a brief and statistical methodology is proposed to select data sets of for more representative model combinations. The main purpose is to choose the most representative daily maximum temperature data set of CMIP6 models over different CORDEX Regions in the period between 1970 and 1999 with respect to observation data set (WCRP). Different models can represent the distribution of observed maximum temperature over a region but it might not be successful over another region. A recent methodology is proposed to find more / the most convenient models having the representative daily maximum temperature over different regions of CORDEX. The robustness and accuracy of the data sets, used in extreme event studies, are generally constructed over unique values. For heat wave analysis, the reliability of the results of a model is generally determined by comparing the outcomes of 95 % (99 % or % 90) of the observed variable of the model and observation data set and the other percentages are neglected. It is possible that both distribution patterns of the model and observation data set are close to each other but the whole range has to be counted on to claim that these two data sets show same patterns. Hence, the difference of 1, 5, 10, 25, 32, 45, 50, 55, 68, 75, 90, 95 and 99 percentiles and the minimum, maximum values of models and observation data set of each grid in each season are taken in consideration in this methodology to select the most representative data set.

Keywords: CMIP6, maximum temperature, CORDEX, climate model

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