Performance of the Cmip5 Models in Simulation of the Present and Future Precipitation over the Lake Victoria Basin

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Abstract : The usefulness and limitations in climate information are due to uncertainty inherent in the climate system. For any given region to have sustainable development it is important to apply climate information into its socio-economic strategic plans. The overall objective of the study was to assess the performance of the Coupled Model Inter-comparison Project (CMIP5) over the Lake Victoria Basin. The datasets used included the observed point station data, gridded rainfall data from Climate Research Unit (CRU) and hindcast data from eight CMIP5. The methodology included trend analysis, spatial analysis, correlation analysis, Principal Component Analysis (PCA) regression analysis, and categorical statistical skill score. Analysis of the trends in the observed rainfall records indicated an increase in rainfall variability both in space and time for all the seasons. The spatial patterns of the individual models output from the models of MPI, MIROC, EC-EARTH and CNRM were closest to the observed rainfall patterns.

Keywords : categorical statistics, coupled model inter-comparison project, principal component analysis, statistical downscaling

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