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Early Warning and Forecasting system for extreme events and climate related drought using ICTP-Regional Climate Model (RegCM)

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Dynamical downscaling using a Regional Climate Models (RCMs) are one of the most promising tools for providing early warnings for natural hazards such as floods and droughts. Using two case studies, this paper documents the skill of a regional climate model in the seasonal forecasting of below and over normal rainfall in Nile Basin Region during the rainy seasons of 1993-94 and 2006-07 for the drought and flood years, respectively.

Two different cloud schemes are applied to achieve a sensitivity study to predicate the rainfall over Nile Basin. This paper shows that the regional climate model, when being forced by reasonably good forecasts from a global model, can generate useful seasonal rainfall forecasts for the region, where it is dominated by the monsoon. The spatial details of the dry conditions obtained from the regional climate model forecast are also found to be comparable with the observed distribution.