

Investigations of the International Experiments, GAME and I-STEP and the Global Atmospheric Model Findings

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The investigations and the findings presented in this paper may provide some research insight, which is relevant to the atmospheric-environmental findings of Global Atmospheric Models vis-à-vis GAME (GEWEX) and I-STEP Programmes, where GEWEX is the abbreviation for the 'Global Energy and Water Cycle Experiment'. The observations under these programmes will not only improve our understanding but also will help us to improve the representation of these processes in the "atmospheric general circulation model" [AGCM(O)], which is basically the Global Spectral Model T80. It is originally adapted from NCEP, NMC, USA (Kanamitsu, 1989). Its important features are model dynamics and modifications made in the model physics (Begum, 2003; Begum, 2005; Begum, 2017; George and Begum, 1997), which we call as [AGCM(M)], where M refers to "modified". As the main objective of GAME is to understand the role of Asian monsoon in the global energy budget and water cycle, in the present experiment we have computed the hydrological budget (Fig.1). The experimental model shows reasonable balance between the evaporation and precipitation.

The GEWEX data and assessment panel guide the long-term global atmospheric surface water and energy budget products. Use of such experiments help in developing and improving representation of the atmosphere in weather and climate models. A related experiment, GAME (Global Asian Monsoon Experiment) is also implemented to understand the role of the Asian monsoon in the global energy and water cycle.

The I-STEP is the 'International Solar-Terrestrial Energy Programme', which is the key parameter ISTEP programme. It combines resources on an International level, determining the flow of mass, momentum and energy in the solar-terrestrial environment.

These investigations provide some research insight of the model predictions and its role in understanding atmospheric-environmental findings of GEWEX and I-STEP programmes.

References

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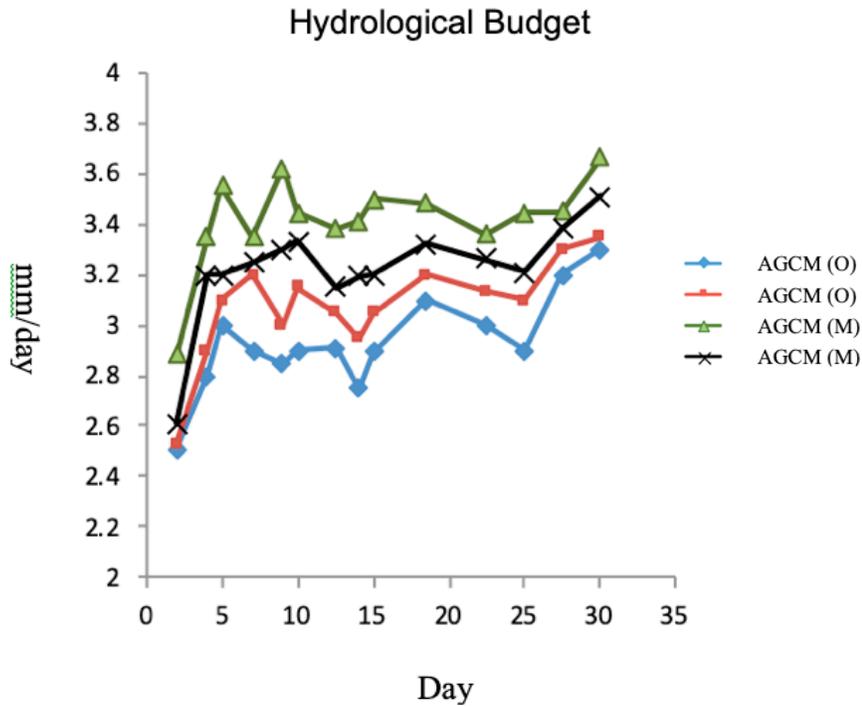


Fig. 1. Total precipitation and surface evaporation over the globe for 30 days integration of June 1995, 00z initial condition by the AGCM original model [AGCM(O)] and the modified model [AGCM(M)].