



An evaluation of China's water cycle in the MetUM-GC2 coupled model

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There is a general consensus in climate projections that the global hydrological cycle is likely to experience significant changes in the future, in response to increased concentrations of greenhouse gases. At the regional scale, model simulations show large variations in the predictions of changes in the components of the water cycle. Increasing confidence in regional prediction of the water cycle is at the top of the NWP and climate research agenda, requiring a comprehensive evaluation of the physical processes which may play an important role.

Here we present preliminary results of an evaluation of the capacity of the MetUM-GC2 coupled model to reproduce the characteristics of the water cycle in the region of China. Using water budget techniques in the atmospheric and terrestrial branches we test the water cycle components and the model's ability to replicate the climatological annual cycle and its interannual variability. Recent drought and flood events are evaluated and various metrics are employed to compare the role played by the atmospheric general circulation including the boreal summer and winter monsoon regimes and soil moisture feedback in model and observations.