



Modeling the temporal and spatial hydrology characteristic in Mekong River basin aided by TRMM and MODIS remotely sensing products

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Title:

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Abstract:

Mekong River is the longest river in Southeast Asia and the basin terrain is characterized by special Longitudinal Range-Gorge geomorphology. The elevation ranges from ~6500m in the northwestern Tibet Plateau to sea level in southeastern estuary delta and the local altitude difference between range and the neighboring gorge can be as high as ~2000m. The alpine terrain leads to the strong variability of precipitation and hydrological processes including snow/ice melting and storm runoff, which makes the ground observation difficult. In this study, we established a semi-distributed hydrological model THREW aided by Tropical Rainfall Measuring Mission satellite (TRMM) precipitation data and Moderate Resolution Imaging Spectroradiometer (MODIS) snow cover product. The temporal and spatial variability of hydrological processes was analyzed. The results provide valuable information for process understanding in such alpine area and for local water resources and hydropower management.

Key words: Longitudinal Range-Gorge; distributed hydrological model; MODIS snow cover area; TRMM.