

Observation and Simulation of land-air and lake-air interactions on the Tibetan Plateau

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In the past 30 years, the Qinghai-Tibet Plateau has been warming and moistening, and the Asian Water Tower has undergone tremendous changes. However, due to the insufficiency of observation data, many basic processes are lack of deep understanding, and their quantification is seriously insufficient.

Since 2010, we have carried out the deployment of hydro-meteorological observation networks in the Tibetan Plateau to observe precipitation, precipitable water vapor, soil moisture and temperature, and lake temperature profiles.

Based on the observed data, we found some new phenomena, revealed the shortcomings of current land and climate models, and explored the effects of turbulent orographic form drag and lake-air interactions on precipitation.