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The evaluation of land surface parameters for model to derive land surface fluxes in the Tibetan Plateau

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Firstly, based on the difference of model and in-situ observations, a serious of sensitive experiments were done by using WRF. In order to use remote sensing products, a land-atmosphere model was initialized by ingesting land surface parameters, such as AMSR-E RS products, and the results were compared with the default model configuration and with in-situ long-term CAMP/Tibet observations.

Secondly, a land-atmosphere model was initialized by ingesting AMSR-E products, and the results were compared with the default model configuration and with in-situ long-term CAMP/Tibet observations. The differences between the AMSR-E initialized model runs with the default model configuration and in situ data showed an apparent inconsistency in the model-simulated land surface heat fluxes. The results showed that the soil moisture was sensitive to the specific model configuration. To evaluate and verify the model stability, a long-term modeling study with AMSR-E soil moisture data ingestion was performed. Based on test simulations, AMSR-E data were assimilated into an atmospheric model for July and August 2007. The results showed that the land surface fluxes agreed well with both the in-situ data and the results of the default model configuration. Therefore, the simulation can be used to retrieve land surface heat fluxes from an atmospheric model over the Tibetan Plateau.

All of the different methods will clarify the land surface heating field in complex plateau, it also can affect atmospheric cycle over the Tibetan Plateau even all of the global atmospheric cycle pattern.