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ADMIP: Asian Drylands Model Intercomparison Project

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In this presentation we introduce our ongoing project entitled Asian Drylands Model Intercomparison Project (ADMIP). As the name shows, the project focuses on the Asian drylands which comprise large portion of the Asian land surface. Due to small amount of rainfall and low productivity, the dryland ecosystem is vulnerable, and has large inter-annual variability. Such environment is difficult to simulate, and the model outputs have large variation.

The goals of the project are to assess the uncertainty in the model prediction, and to improve accuracy of the model prediction for the land surface environment. As the participants, we have 18 models including land surface models and terrestrial ecosystem models. Since these models have different focuses and different input/output variables, we needed study sites which cover a wide range of observation data, and as a result of discussion we selected Kherlenbayan-Ulaan in Mongolia and Tongyu in China. In addition to the ground-based observation data for model validation, in the experiments we also use remote sensing data as a complement to the station data and reanalysis data for spin-up.

The experiments have three stages: an experiment using the default parameter values (Stage 0), an experiment using the parameter values in the existing literature (Stage 1), and an experiment using the parameter values tuned to well-reproduce the observation in the important variables (Stage 2). In the presentation, we will show some results from Stages 0 and 1.

Keywords: Asia, Drylands, Terrestrial ecosystem models, Land surface models, Observation data