

## The Evaluation of SiB3 Performance at Three Different Climate Site

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The sib3 (simple biosphere modle 3) is the new version for sib. It has five major improments basis on SiB2.First,three soil layers has been replaced by ten soil layers with roots in all layers,which is adopted from CLM and NCAR Land Surface Model; second, plant available water (PAW) replaces root zone water to calculate water stress ;third,The prognostic snow cover is divided upto five layers,depended on snow mass and history;fourth,SiB3 has added CAS with prognostic temperature,co2,heat and water flux;Finally, instead of modeling the canopy as a big leaf,the SuShi version of SiB divides the canopy throughout the day based on whether the leaf in the sun or shade.Other important improvements include having varying C3 and C4 plant fractions.

The purpose of this investigation was to identify improvements,to evaluate the performance of SiB3 to capture site to site differences and understand the different climate feature at different zone.In this paper, sib3 is running at three sites:Anduo,Km34,Wlef tower.These three site locate in different climate zone and represent different climate types.

At anduo site, net radiation and sensible heat flux was reasonably simulated,while latent heat flux was a little more .However,the soil results were not good as the energy simulation.The top three layers sometimes were too dry. At Km34,the sensible heat flux was more than the observed value;the latent heat flux was close to the observed value,but the peak value was lagged;In summer,the simulated latent flux was more than the observed value;sometimes ,especially in summer,the simulated soils was too wet .

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