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The Study of Land Surface—Atmosphere Interaction over Keerqin Sand Area in Inner Mongolia

HONGSHENG ZHANG[1], XINGZHUO SONG[1], XUHUI CAI[1], CHEN JIAYI[1], MINGXU ZHAO[2], JINGXIANG WANG[2], ZHUANG KANG[3] and SHIGUI BAI[3]

[1]*Department of Atmospheric Physics, School of Physics, Peking University, Beijing 100871*
[2]*The Grassland Research Station of Duolun, Inner-Mongolia Province, Duolun 027300*
[3]*Center of Agriculture technology Service of Yulin, Shanxi Province, Yulin 719000*

This report describes the Intensive Observation Period (IOP) of the study of the land surface-atmosphere interaction field experiment over Keerqin sand area in Inner Mongolia in summer 2001, to try to understand the effects of the human activities on the semi-arid land ecosystems. Micrometeorological data, radiation and turbulent data were measured at the dune and agricultural field surfaces at the same time. The sensible and latent heat fluxes were compared with which obtained from eddy-correlation, aerodynamic method and Bowen ratio method. The energy budget in the surface layer over the sand area has been studied also, the maximum value of net radiation, sensible heat flux and soil heat flux are 400 Wm^{-2} , 170Wm^{-2} and 100Wm^{-2} or so, respectively. The latent heat flux is always smaller than 60Wm^{-2}. The energy imbalance has been found in the surface over the sand area. Meanwhile, micrometeorological data obtained from this experiment is also very important and useful to advance the study of desertification and aridification in semi-arid area.

Keywords: Land surface - atmosphere processes, Energy balance, Keerqin sand area, Observational Method