

The Estimation of Downward Longwave Radiation in the Mongolian Plateau

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Estimation of downward longwave radiation in the Mongolian plateau belonging to the semi-arid region was tried to calculate simply using some kinds of meteorological monitoring data. The data of three water cycle monitoring stations which were MGS (Mongolian plateau steppe site), KUB(steppe site), and Forest (Tiger forest site in the northern part of Mongolia) ones were used for the estimation. The KUB and Forest site stations were equipped with downward longwave and shortwave radiometers, but the MGS site station did not have a downward longwave radiometer. The Kondo equation and the Sugita-Brutsaert equation (SB Eq) were employed to estimate the downward long wave radiation at the KUB and Forest sites and investigated the validity. The both equations were very accurate and effective to the estimation. The estimation results by the SB equation showed that the annual maximum value of the downward longwave radiation has been slightly increasing and the minimum value has been slightly decreasing since 2003 at Mandalgobi with the decrease of precipitation.