

# **Climatology of Surface Energy Balance over Eurasia Deduced NCEP/NCAR Reanalysis Data and in-situ AWS Data**

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## **Abstract**

The surface net radiation flux is fundamental forcing of sensible and latent heat energy fluxes, which play an essential role in forcing of the seasonal march of the climate system. These elements are particularly important over the eastern half of the Eurasian continent, to unravel the role of the land/ocean heating contrast on the Asian winter and summer monsoon systems. The GAME Asian AWS Network (GAME-AAN) focused on the monitoring of the surface radiation and energy fluxes along the meridional as well as longitudinal transects in monsoon Asia. It would also contribute greatly to validate the surface energy conditions derived from satellites, and the output from various climate models.

In this study we aimed to compare the seasonal variation of surface fluxes in Asian Monsoon region between the data derived from NCEP/NCAR reanalysis and the data observed at each GAME-AAN sites. It will help not only to check the spatial representative of the energy fluxes of in-situ observation data but also to validate the data derived from objective analysis data, e.g., NCEP/NCAR reanalysis data. The preliminary analysis using the in-situ AWS data in Mongolia (of pre GAME-AAN site) has shown that the net radiation is in considerably good agreement with that derived from NCEP/NCAR reanalysis when we compared 10 days mean data from 1993 to 1998. The sensible and latent heat flux, however, are not in good agreement with each other. The assessment of the role of these fluxes on the seasonal march of the atmosphere are being undertaken, considering the similarities and differences between the reanalysis data and the in-situ AWS data from GAME-AAN.