



Energy, Water Vapor, and CO₂ Fluxes above a Subtropical Monsoon Rice Paddy in Taiwan

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Eddy-covariance measurements were carried from March, 2010 to December 2010 to understand the characteristics of sensible heat, water vapor, and CO₂ fluxes above a subtropical monsoon rice paddy in north Taiwan. The results showed that about 25% of net radiation was distributed to latent heat flux. Penman-Monteith equation was found to reproduce the latent heat flux well. About ten to fifteen percent of the net radiation was partitioned into sensible heat flux and the amount was related to the leaf area index at this site. The rest of the net radiation was absorbed by the soil surface which was saturated with water or flooded with 3-5 cm depth of water most of the time during the experiment.

During the growing season the maximum CO₂ uptake was about 15 micro mol m⁻² s⁻¹. In the fallow period (July 2010 – Dec. 2010), where there was no rice on the paddy, the maximum CO₂ emission rate from the soil-water surface was about 5 micro mol m⁻² s⁻¹ which was about the same as the growing season.