

Evaluation of Uncertainty in Eddy Covariance Measurements of Carbon Flux at Deciduous and Coniferous Forests in Complex Terrain, Korea

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Eddy covariance (EC) method is the most widely used method in measuring carbon, water, and energy fluxes over various ecosystems. These flux data can be subject to uncertainty due to sampling error, calibration error, instrument limitation, and measurement conditions, which are in conflict with the underlying assumption. Therefore, quantifying the magnitude of uncertainty can be essential for data analysis and interpretation. Uncertainty in the EC measurements was assessed for carbon flux using half-hourly data obtained from the two major KoFlux sites (i.e., deciduous and coniferous forests) from 2008 to 2010. And then, uncertainty over the half-hourly data was aggregated to estimate annual uncertainty. We only considered dominant sources of uncertainty (i.e., one point sampling, calibration, WPL correction, frequency response correction, and gap-filling application). In the presentation, we will report the method of and the current progress in uncertainty estimation over half-hourly and annual fluxes.

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