

Network connection of tower flux measurement data
:Toward long term stable flux measurement

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Since last half of 1990's, many flux towers have been constructed mainly for monitoring CO₂ flux using eddy covariance method at various land ecosystems in the world. And much effort have been made to keep data quality. Comparing with standard environmental factors (e.g. sun radiation, wind speed), eddy covariance measurement requires sensitive equipment (infrared CO₂ gas analyzer and supersonic anemometer), frequent maintenance and severe data quality are necessary. On the other hand, to evaluate the effect of land ecosystem to global climate change, long term and quality certified data are demanded. We, 4 national research institutes, constructed and have maintained 11 CO₂ flux measurement towers in Japan and East Asia (Fig.1, 8 in Japan and 3 in East Asia countries). To reduce effort of maintenance and increase data quality, we have conducted following contrivances supported by Environmental Agency Fund.

1. For quick check of flux measurement devices and data quality, we constructed the system to integrate whole flux site data in a data saver at Tsukuba using network.
2. To reduce effort of data analysis, we set up standardized flux data format and developed an automated flux data analyze system.
3. To check each site data quality, we developed a mobile closed pass CO₂ flux measurement system
4. For quick learning of flux measurement technique, we published a flux measurement manual (http://www2.ffpri.affrc.go.jp/labs/flux/manual/FluxManual_Ver1.1b.pdf)

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Fig.1 11 tower flux sites in Asia