Special Collection: AsiaFlux 20th Anniversary

Review and future perspective of AsiaFlux

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Photo 1: Participants of AsiaFlux Workshop 2019 (taken by Mr. Narita at NIES).

AsiaFlux (<http://www.asiaflux.net/>) was established in 1999 as the Asian arm of FLUXNET, the worldwide flux network, to develop collaborative research and data sets on the cycles of carbon and water in key ecosystems in Asia, to organize workshops and training on current and related global change themes, and to cultivate next generation scientists to be informed leaders with skills and perspectives. Over the past 20 years, AsiaFlux has developed into a regional research network composed of 28 member countries. More than 100 flux observation towers were built in Asia, covering diverse terrestrial ecosystems. Researchers of AsiaFlux have made great progress in flux observation, remote-sensing and ecosystem modeling, and made outstanding contribution to quantifying global carbon balance and understanding the functions of Asian terrestrial ecosystems. AsiaFlux will continue to lead flux-related research, contribute to the achievement of sustainable development in Asia, and provide an open forum for both field researchers (data providers) and remote-sensing / modeling researchers (data users) to encourage their communication and collaboration.

AsiaFlux held a special workshop in 2019 in Takayama, Japan, to celebrate the 20th anniversary with support from Gifu University and National Institute for Environmental Studies (NIES). In the workshop, a special session was organized to look back on the past and project the future of AsiaFlux. Seven speakers were invited and talked about principal research topics in AsiaFlux: 1) carbon dioxide (CO₂) flux observation,

2) water and energy fluxes, 3) soil respiration, 4) volatile organic compound exchange, 5) ecosystem processes, 6) remote sensing, and 7) terrestrial biosphere modeling. Based on these presentations, seven review papers were planned. This issue is composed of five review papers on water and energy fluxes (Kang and Cho, 2021), soil respiration (Sha *et al.*, 2021), volatile organic compound (Tani and Mochizuki, 2021), ecosystem processes (Chang *et al.*, 2021) and ecosystem modeling (Ito and Ichii, 2021). The other two review papers on eddy CO₂ flux and remote sensing will be presented soon in this journal, *Journal of Agricultural Meteorology*. We are grateful to all the authors of these impressive review papers and the editorial board of The Society of Agricultural Meteorology of Japan on behalf of AsiaFlux.

Chang SC, Saitoh TM, Shibata H, Suzuki SN, 2021: Recent advances in the understanding of ecosystem processes at eddy covariance CO₂ flux sites in East Asian forest ecosystems: a review. *Journal of Agricultural Meteorology*, 77(1), 52–65.

Ito A, Ichii K, 2021: Terrestrial ecosystem model studies and their contributions to AsiaFlux. *Journal of Agricultural Meteorology*, 77(1), 81–95.

Kang M, Cho S, 2021: Progress in water and energy flux studies in Asia: A review focused on eddy covariance measurements. *Journal of Agricultural Meteorology*, 77(1), 2–23.

Sha L, Teramoto M, Noh NJ, Hashimoto S, Yang M, Sanwangri M, Liang N, 2021: Soil carbon flux research in the Asian region: Review and future perspectives. *Journal of Agricultural Meteorology*, 77(1), 24–51.

Tani A, Mochizuki T, 2021: Review: Exchanges of volatile organic compounds between terrestrial ecosystems and the atmosphere. *Journal of Agricultural Meteorology*, 77(1), 66–80.

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