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The Scientific Moderation Committee
Fluxnet

Ben-Jei Tsuang, Prof.
Department of Environmental
Engineering, Nat'l Chung-Hsing
University, Taichung, Taiwan

Fluxnet synthesis proposal

Title:

Thermal inertial and land characteristics for land surface modeling over different land types

Short outline:

Many meteorological and air-quality models require land characteristics such as albedo, Bowen ratio, surface moisture availability, thermal inertial and area heat capacity, as inputs for the calculations of mixing length, stability class, dry deposition, and surface energy components. Here, we would like to propose to derive the land characteristics for land surface modeling over different land types using the method in Tsai et al. (2007). Tsai et al (2007) has derived the characteristics over rice paddies. We would like to apply the method to other land types as well as rice paddy sites, especially for sites in Asia. To begin with, thermal inertial will be determined because it's an important variable in determining the energy exchanges between the atmosphere and the underlying land surface.

Initial coordinator

Ben-Jei Tsuang, Nat'l Chung-Hsing University, Taiwan

Proposing group:

Ben-Jei Tsuang (btsuang@gmail.com), Jeng-Lin Tsai (jltsai0408@gmail.com) (Nat'l Chung-Hsing University, Taiwan)

Sites involved:

All sites in the Fluxnet network

Rules applied for co-authorship:

Every site contributor can nominate co-authors. All co-authors are expected to actively contribute to the manuscript.

Ref:

1. Tsuang, B.-J., C.-Y. Tu, J.-L. Tsai, J.A. Dracup, K. Arpe and T. Meyers, 2009: A more accurate scheme for calculating Earth's skin temperature. *Climate Dynamics* 32, 251-272, DOI 10.1007/s00382-008-0479-2.
2. Tsuang, B.-J.; Tsai, J.-L.; Lu, P.-S.; Yao, M.-H.; Shen, Y., 2008/6: Surface energy components and land characteristics of a rice paddy. *Bulletin of the American Meteorological Society*, 791. (Papers of Note)
3. Tsuang, B.-J., M.D. Chou, Y. Zhang, A. Roesch, and K. Yang, 2008: Evaluations of Land–Ocean Skin Temperatures of the ISCCP Satellite Retrievals and the NCEP and ERA Reanalyses. *J. Climate*, 21, 308–330.
4. Tsai, J.-L.; Tsuang, B.-J.; Lu, P.-S.; Yao, M.-H.; Shen, Y., 2007: Surface energy components and land characteristics of a rice paddy. *Journal of Applied Meteorology and Climatology* Vol. 46, No. 11, 1879–1900.