Water, Energy and Carbon Cycles in Terrestrial Systems: Local scale observations through Fluxnet and other micrometeorological tower sites

Understanding the flows of CO_2, water and energy to and from the terrestrial ecosystems is the basis for revealing roles of terrestrial biosphere in global environmental change. This requires constant monitoring of diverse ecosystems, rapid sharing of quality-controlled data among the global science community, and multidisciplinary synthesizing of scientific findings. This session welcomes reports from the followings topics: Multiyear tower flux measurements; Measurements from underrepresented ecosystems (savannas, tropical rainforests, wetlands, etc.) and regions (Asia, Africa, east Europe and south America); Cross-vegetation type and cross-climate type flux comparisons; Partitioning of NEE or NEP using multiple methods such as stable isotopes, chamber, nighttime flux extrapolation, light response functions, etc.; Impacts of clouds, fronts, extreme weather events, El Niño on flux exchanges; Controls of site conditions, stand age, succession stages, canopy structures, species diversity on flux exchanges; Scaling up of tower flux measurements; Validation of SVAT models for multi-temporal and spatial scales; Interpretation and validation of results from remote sensing such as MODIS derived products and atmospheric inversion; Development of global network of flux towers.

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