PROPOSAL FOR FLUXNET SYNTHESIS PUBLICATION

Initial coordinators:: Crystal Schaaf

Collaborators needing access to data: Alessandro Cescatti, Robert Cook, Bev Law

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DATASET PROPOSED

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TITLE OF PAPER AND OUTLINE

TITLE Intercomparison of the MODIS albedo product and other moderate resolution satellite albedo products at the FLUXNET sites

Abstract:

Land surface albedo, or the ratio of the radiant flux reflected from the Earth's surface to the incident flux, is a key forcing parameter controlling the planetary radiative energy budget and partitioning of radiative energy between the atmospheric and surface. Albedo varies widely in space and time as a result of both natural processes and human activities and thus satellite remote sensing products are required to capture the global variability. This proposal represents a follow-on from the previously approved project (led by A. Cescatti and entitled "Validation of MODIS albedo product at the FLUXNET sites") which evaluated the quality of the MODIS albedo product at a large number of FLUXNET sites. A great deal of effort was needed to obtain the MODIS albedo data and the MODIS aerosol optical properties at each site, to establish corresponding cloud-free albedo quantities at each site and finally, to evaluate of the spatial representativeness of each site to adequately represent a moderate resolution satellite footprint. The paper summarizing this effort is currently under review and revision.

Due to the long data record available from MODIS (now more than a decade), a number of satellite product intercomparisons between MODIS and other moderate resolution albedo data products (such as those now available from MERIS, SEVIRI, POLDER, NPP, etc.) are now planned or underway (many under the auspices of the CEOS/WGCV/Land Product Validation Surface Radiation subgroup of which C. Schaaf is currently co-chair). Adding flux tower observations to these satellite product intercomparisons is the next step in validation.

In addition, there have been some recent efforts to relate satellite-derived spectral albedo products with changes in vegetation process and productivity. Some of the relationships between albedo and foliar Nitrogen, biomass, canopy structure, and phenological transitions can be explored through careful comparision of the field data and the satellite retrievals at these locations. This proposal formally requests permission to reuse the FLUXNET data already processed for the MODIS albedo validation effort in these subsequent intercomparisons and evaluations.

PROPOSED SITES TO BE INVOLVED

All FLUXNET sites with measurements of incoming and outgoing shortwave radiation. PIs of any sites used will be contacted before data are used in any publication.

PROPOSED RULES FOR CO-AUTHORSHIP

Members of the FLUXNET community are welcome as coauthors given that they provide academic input for the analysis. Any collaborator not in the FLUXNET community who is willing to provide substantial intellectual input to the analysis is also welcome as a coauthor. If a site PI would rather their data not be used in the synthesis activity, they will not be included as co-authors and the data from their site will not be included in the analysis.