

## PROPOSAL FOR FLUXNET SYNTHESIS PUBLICATION



**Initial coordinators:: Collaborators needing access to data:**

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### DATASET PROPOSED

LaThuile

### TITLE OF PAPER AND OUTLINE

#### "Evaluation of evapotranspiration process-based models with in-situ and satellite observations"

Evapotranspiration (ET) is an essential component of the water and energy cycles. It is highly variable in both space and time, across climates and ecosystems, and is difficult to estimate. A direct estimation by remote sensing techniques is not possible. Therefore, global observations related to atmospheric and surface parameters have to be combined within an interpretive model if we aim to derive observational ET products at global scale.

To advance towards the development of ET estimates at global and regional scales, ESA has initiated the WACMOS-ET project (<http://wacmoset.estellus.eu>). The main objectives are to develop a Reference Input Data Set (RIDS) to drive ET estimates, and to perform a cross-comparison, error characterization, and validation exercise of a group of selected ET algorithms. The RIDS will comprise internally-generated albedo, LAI, fPAR and land surface temperature datasets, maximising the use of European Earth observation assets, which will be combined with adapted radiation and surface meteorology products to complete the inputs required to drive the ET algorithms.

The validation exercise will be conducted at different scales using a range of meteorological and hydrological datasets. At the tower scale a matrix of observational datasets, including in-situ FLUXNET measurements and satellite RIDS observations, will be put together and used to: (1) analyze the model capacity to produce ET estimates under different drivers, and (2) study the propagation of inputs uncertainty to the generated model ET estimates. Model ET estimates will be compared with the tower fluxes and the capability of the models to reproduce observed seasonal variations for different biomes under varying soil, vegetation, and atmospheric conditions will be evaluated.

## **PROPOSED SITES TO BE INVOLVED**

All sites with energy flux data from 2005 and later.

## **PROPOSED RULES FOR CO-AUTHORSHIP**

Intellectual contributions to the data analysis and/or the manuscript.

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