

**Title: Seasonal variation of plant functional type photosynthetic parameters derived directly from global Fluxnet eddy covariance data**

**Coordinator**

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**Proposing group**

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**Outline**

In our article with the title 'Assessing parameter variability in a photosynthesis model within and between plant functional types using global Fluxnet eddy covariance data' we used a photosynthesis model to study the variability of the parameters. Eddy covariance flux observations were combined with LAI derived from satellite images (MODIS). LAI is used to scale the model parameters to the leaf level. But LAI has a much larger temporal and spatial scale than the flux observations, and can introduce a large uncertainty to the model parameters. Therefore we want to investigate in this study whether it is possible to derive a seasonal (e.g. LAI) signal from flux observations.

For this we will derive the model parameters on a short time scale of a week, which will be used to estimate site model parameters and their responses to temperature and soil water content. The seasonality of the model parameters will be validated with weekly model parameters. Specific questions we want to address: (1) is the seasonality of the model parameters comparable with that of the weekly model parameters, (2) where and when do the largest deviations occur, (3) can the weekly model parameters be used to derive the site parameters, (4) will this improve the flux simulations and (5) can the variation of these 'improved' model parameters be understood with a plant functional type classification?

*Key words:* Plant functional types, Model parameters, Photosynthesis, Transpiration, Eddy covariance, Fluxnet

**Sites that initially would be involved**

All sites with enough and good quality data.

**Rules applied for use of site data and co-authorship**

The rules as proposed in the disclaimer for the FLUXNET2007 synthesis will be applied.