

## **Title: Generalities in worldwide ecosystem water and carbon exchange**

### **Short Outline**

At FLUXNET sites the carbon and water exchange, as well as the climate is measured over the last 10 years. We propose to use this information, at as many sites as possible, to explore general global relations between the carbon and water exchange and the climate. We will do this by applying a simple photosynthesis and transpiration model and relating the model parameters to the environmental variables. Our starting point is that the type of vegetation plays a minor role in explaining the fluxes than compared to the climate. Therefore we will start by grouping all vegetation types together.

General relations that we are expecting to find are for example that the water use efficiency of an ecosystem will increase in a drier environment, resulting in a higher carbon uptake with a lower water use, as compared to an ecosystem with larger water availability. Also the light use efficiency might be related to the amount of incoming radiation.

### **Initial coordinator and proposing group**

Margriet Groenendijk                      VU, Amsterdam, the Netherlands  
Han Dolman                                      VU, Amsterdam, the Netherlands

### **CVs of initial coordinator and proposing group**

**Margriet Groenendijk** started as a PhD student in 2005. Her research concerns the flexible adaptation of terrestrial ecosystems and involves the development of a relatively simple photosynthesis and transpiration model to derive model parameters by optimizing the eddy covariance data. And also a more complex individual-based model, Spheres, which simulates the growth of individual trees and competition for light and water between trees. She worked from 2002 until 2004 at Alterra in Wageningen with the Integrated Water Management group, where she did hydrological model studies at different scales.

**Han Dolman** has more than 20 years experience in land surface atmosphere interaction measurement and modelling research. He is presently head of the Department of Hydrology and Geoenvironmental Science at the VUA - Faculty of Earth and Life Sciences He has over 70 publications in internationally refereed journals. He is member of various international committees and active in GEWEXISLSCP, and IGBP, IAHS and EGS. He is co-ordinator of the regional component of CarboEurope IP and was chairman of the CarboEurope cluster from 2001 to 2003 and is currently member of the executive board. He is involved several EU and national projects among which the TCOS-Siberia project. In April 2005 he organised a CarboEurope GHG (concerted Action) workshop at the Dutch Royal Academy of Sciences on developing a blueprint for a GHG observing system for Europe.

### **Sites that initially would be involved**

As many sites as possible. Sites will need to represent different vegetation types and climate regions.

### **Rules applied for co-authorship**

Persons that have contributed data and/or have given intellectual input to the paper will be contacted to invite them for co-authorship.