



Introducing tropical lianas in a vegetation model

Hans Verbeeck, Hannes De Deurwaerder, Manfredo di Procia e Brugnera, Sruthi Krshna Moorthy Paravathi, Nancy Pausenberger, Jana Roels, and elizabeth kearsley

Ghent University, CAVElab Computational and Applied Vegetation Ecology, Gent, Belgium (hans.verbeeck@ugent.be)

Tropical forests are essential components of the earth system and play a critical role for land surface feedbacks to climate change. These forests are currently experiencing large-scale structural changes, including the increase of liana abundance and biomass. This liana proliferation might have large impacts on the carbon cycle of tropical forests. However no single global vegetation model currently accounts for lianas.

The TREECLIMBERS project (ERC starting grant) aims to introduce for the first time lianas into a vegetation model. The project attempts to reach this challenging goal by performing a global meta-analysis on liana data and by collecting new data in South American forests. Those new and existing datasets form the basis of a new liana plant functional type (PFT) that will be included in the Ecosystem Demography model (ED2).

This presentation will show an overview of the current progress of the TREECLIMBERS project. Liana inventory data collected in French Guiana along a forest disturbance gradient show the relation between liana abundance and disturbance. Xylem water isotope analysis indicates that trees and lianas can rely on different soil water resources. New modelling concepts for liana PFTs will be presented and in-situ leaf gas exchange and sap flow data are used to parameterize water and carbon fluxes for this new PFT. Finally ongoing terrestrial LiDAR observations of liana infested forest will be highlighted.