Using remote sensing of vegetation to validate the gross primary productivity calculated by a dynamic vegetation model

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Availability:
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Thematics :
Climate, environment and oceanography

Description:

This master thesis will be performed in the framework of the BELAIR programme from the Belgian Science Policy (BELSPO). The objective of BELAIR is to develop test sites in various ecosystems in Belgium, where different datasets from remote sensing will be used and compared to ground data and modelling. A new site has been created within BELAIR to represent forest ecosystems. This site has been named BELAIR SILVA. It is located in the Belgian Ardenne, spanning the region comprised between Vielsalm and Eupen. Our laboratory is participating in the BELAIR SILVA consortium. Data will be collected over the site during 2018 with hyperspectral instruments embarked on drones and airplanes. Groundbased data on the vegetation will be acquired by our laboratory in collaboration with other partners of the consortium.

The objective of the master thesis will be to run simulations over the BELAIR SILVA area with our dynamic vegetation model CARAIB. This model calculates the leaf area index and the gross primary productivity, together with other characteristics of the vegetation, at the species level. The results of the model for key forest species will be compared to the ground data collected on the site and to the hyperspectral data collected by the instruments embarked on the drones and airplanes. A comparison can also be undertaken with satellite data (e.g., MODIS, SENTINEL). The student will participate in the ground data acquisition.

Collaboration :   Alain Hambuckers, UR SPHERES, University of Liège, Belgium
                  BELAIR SILVA consortium, Belgian Science Policy (BELSPO)