AGU FALL MEETING
San Francisco | 15–19 December 2014

B53B-0177: Detection and Distribution of Natural Gaps in Tropical Rainforest

Friday, 19 December 2014
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Forest management is important to assess biodiversity and ecological processes. Requirements for disturbance information have also been motivated by the scientific community. Therefore, understanding and monitoring the distribution frequencies of treefall gaps is relevant to better understanding and predicting the carbon budget in response to global change and land use change. In this work we characterize and quantify the frequency distribution of natural canopy gaps. We observe then interaction between environment variables and gap formation across tropical rainforest of the French Guiana region by using high resolution airborne Light Detection and Ranging (LiDAR). We mapped gaps with canopy model distribution on 40000 ha of forest. We used a Bayesian modelling framework to estimate and select useful covariate model parameters. Topographic variables are included in a model to predict gap size distribution. We discuss results from the interaction between environment and gap size distribution, mainly topographic indexes. The use of both airborne and space-based techniques has improved our ability to supply needed disturbance information. This work is an approach at plot scale. The use of satellite data will allow us to work at forest scale. The inclusion of climate variables in our model will let us assess the impact of global change on tropical rainforest.

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