



Towards extraction of lianas from terrestrial LIDAR scans of tropical forests

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Increased liana abundance results in reduced tree growth and increased tree mortality in tropical forest. The impact of lianas on forest-wide carbon storage has been a special interest for many researchers. The vertical and horizontal spatial distribution of lianas in tropical forest will determine the interaction with trees and the forest carbon cycle. In this study, we introduce an algorithm to extract lianas from terrestrial laser scanning (TLS) data of a tropical forest. We developed a classification method for separating liana points from other points in a point cloud under canopy. We used a Random Forests machine learning algorithm for the classification of liana points from the other points. The leaf-wood and liana-tree classification accuracies are 92.8% and 92.03%, respectively. The results show the potential of TLS data for analysis the spatial distribution of lianas in forest stands and we explore the potential of extracting lianas from TLS point clouds.