ESTIMATING CANOPY HEIGHT WITH SMALL FOOTPRINT LIDAR AND FIELD MEASUREMENTS: A TROPICAL CHALLENGE

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ABSTRACT:

Estimates of canopy height will be obtained from a small footprint point Lidar dataset in a lowland tropical rainforest at La Selva Biological Station, Costa Rica. Lidar estimates will be compared to field measurements of canopy height done at every point of a 5 by 5 m grid in 18 0.5 ha plots distributed throughout the forest. Maximum canopy height was recorded at each of these points up to a height of 15 m. A 5 by 5 m grid will be also used to interpolate the heights of the Lidar data. Statistical analyses will be done to contrast height estimates from Lidar and field data at different height intervals. We expect greater differences between the two estimates at high heights where field estimates are likely to be less accurate and at low heights, where Lidar estimates are likely to be less accurate. We expect the greatest coherence between the two datasets at intermediate canopy heights.

TOPIC: Lidar and laser scanning
ALTERNATIVE TOPIC: Data fusion and data assimilation