

A Point Cloud Perspective of Forest Inventory: The Low-down on Airborne Laser Scanning and Aerial Photography

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Abstract:

Forest inventory is an estimate of the structural attributes of a forest. These attributes include tree height, diameter, crown depth, wood volume, aboveground biomass, basal area and number of trees per hectare. Reliable methods to estimate forest inventory are critical to commercial forest operations. Traditionally, these forest attributes are derived manually at a small number of inventory plots. This research aims to explore contemporary digital Aerial Photography (AP) as an alternative to Airborne Laser Scanning (ALS) to reduce the cost, time, labour and workplace risks associated with commercial forest inventory operations. Detailed and in-depth comparative analysis of the ALS and AP point clouds in this research will provide insights about their relationship with the field data.

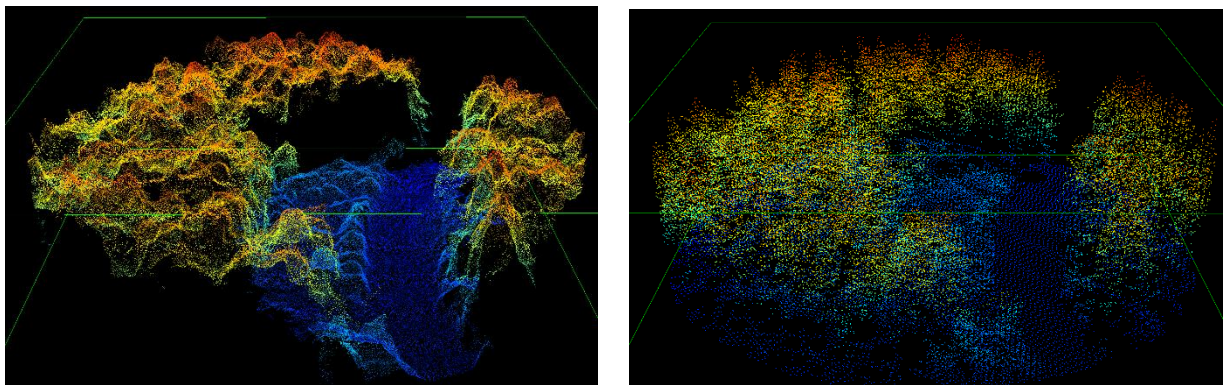


Figure 1. 3D point cloud generated from stereophotography (left) and LiDAR point cloud (right).

References: