

1. ABSTRACT

The utilization of remote sensing technology, particularly the LiDAR technology is becoming a useful tool especially on forest studies. LiDAR application on forestry has shown remarkable potential in terms of its capability to determine forest structural attributes. The study aims to determine whether LiDAR could discriminate and characterize structural differences among and between mangrove forests and families using the LiDAR dataset produced in the Philippines. Specifically, it aims to develop and derive structural attributes of mangrove forest stand such as Canopy Cover (CC), Canopy Height (H), and Shape (S) using LiDAR. Field data of the different mangrove forests were collected to correspond to the developed and derived LiDAR parameters. A tool was also developed that would relate and characterize mangroves according to forest type, relative location, and families by using the LiDAR-derived parameters and its corresponding field data. Clustering analysis was used to determine whether the sample plots can be clustered using the selected structural parameters. The significance and efficacy of the approach will be thoroughly assessed to conclude whether it could provide useful, reliable, and accurate measurements and analysis of the structural attributes for the characterization of the different mangrove families and forest type. Thorough assessment and characterization of the mangroves in different forest types using LiDAR could then be used as an additional approach that would enrich current mangrove forest studies and mangrove forest management in the country.