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Abstracts

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MODELLING SINGLE TREE STRUCTURE WITH TERRESTRIAL LASER SCANNER

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ABSTRACT:
Recent technological developments, which has reliable accuracy and quality for all engineering works, such as remote sensing tools have wide range use in forestry applications. Last decade, sustainable use and management opportunities of forest resources are favorite topics. Thus, precision of obtained data plays an important role in evaluation of current status of forests' value. The use of aerial and terrestrial laser technology has more reliable and effective models to advance the appropriate natural resource management. This study investigates the use of terrestrial laser scanner (TLS) technology in forestry, and also the methodological data processing stages for tree volume extraction is explained.
Z+F Imager 5010C TLS system was used for measure single tree information such as tree height, diameter of breast height, branch volume and canopy closure. In this context more detailed and accurate data can be obtained than conventional inventory sampling in forestry by using TLS systems. However the accuracy of obtained data is up to the experiences of TLS operator in the field. Number of scan stations and its positions are other important factors to reduce noise effect and accurate 3D modelling. The results indicated that the use of point cloud data to extract tree information for forestry applications are promising methodology for precision forestry.