**Extracting Wood Point Cloud from Terrestrial Laser Scanner Data of a Giant Tree**

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***ABSTRACT***

Giant tree with tree height more than 65 m is among the largest and longest living organism on earth. The Terrestrial Laser Scanner (TLS) has become a potential instrument supporting the non-destructive study of giant tree with the detailed tree point cloud. Accurate extraction of wood components from tree point cloud is essential for tree structural parameters and ecological study. In this study, a random forest method was performed to classify the wood and leaf from the Tao tree point cloud. The random forest predictor used were point cloud intensity and 54 geometric features computed on each point cloud. A total of 5% from the tree point cloud were used as the training. The result from manual classification from tree dataset is used as the reference. The classification result has an accuracy of 0.772.

**Keywords:** Giant Tree, Terrestrial Laser Scanner, Wood Point Cloud