ESTIMATION OF TIMBER ASSORTMENTS USING LOW-DENSITY ALS DATA

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Technical Commission VII Symposium 2010

KEY WORDS: Forestry, Estimation, Inventory, Laser scanning, Distributed

ABSTRACT:

The objective here was to analyse the effects of inventory errors on the prediction of assortment outturn volumes carried out in current airborne laser scanning (ALS) inventory method and forest-planning simulation computing in Finland. Harvested logging machine data of 12 clear-cutting stands (5300 trees) in Evo (southern Finland) study area was used as field reference of the study. Prediction error of assortment outturn volumes contains forest inventory, stem distribution generation, prediction of stem form and simulation of bucking errors. ALS inventory-related bias in estimated timber assortments ranged from -5.1 m³/ha to 20.5 m³/ha and RMSE from 6.0 m³/ha to 46.2 m³/ha. Accuracy of the estimated stem distributions varies in different stands. The results showed that the accuracy of the estimates of timber assortments is considerably poorer than the accuracy of stands mean characteristics.

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