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PRECISION OF HARVESTER MEASUREMENT SYSTEMS

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Abstract: *Economic pressure on timber products, global markets and growing demand for ecological and social welfare are compelling forestry to optimize cost-effective and minimized resource consumptive processes in the forestry supply chain. Regarding the potentials of optimizing logistics organization highly mechanized work systems with harvesters and forwarders provide a key role for more than 50 % of the annual cut of softwood timber in Germany. As determination of the sales volume for standard length in Germany normally is fixed by the buyer on stationary all-around measuring devices at mill-side a logistic and control measurement on forest-side is decisive.*
Prerequisite are adequate precision and constancy of harvester measurement systems. In a diploma thesis coached by the KWF validity and reliability of harvester measurement data were analyzed in a field study. Second objective was to check the usability of metrological methods in forestry.
The metrological survey of diameter measurement was conducted with reference pipes and for the determination of length verification saw logs were used. In the field study the detected timber quantity of mill-side measurement was used as reference for harvester measurement data, forest-side total log volume as well as a cord of wood verification by front surface samples.
The results demonstrate the high quality standard of harvester measurement systems regarding metrological and practical aspects. They also put emphasis on the necessity to establish efficient control routines and quality certification of harvester measurement systems including machine settings as well as drivers skills.