

Optical Patterns Measurement of the Diameters of the Trunks of Trees

D. Yuzhakov

Siberian Forest Experiment Station Branch Russian Research Institute of Silviculture and Mechanization of Forestry, Engineer, Tyumen, Russian Federation, yuzhakov@vniilm.ru

A. Nikolaev

Siberian Forest Experiment Station Branch Russian Research Institute of Silviculture and Mechanization of Forestry, Deputy Director for research, Tyumen, Russian Federation, nikolaev@vniilm.ru

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The article analyzes the problems of increasing the accuracy of measuring the diameter of tree trunks and ways to solve them using the developed optical tool. The article describes the way of modeling and creating a new optical instrument. This development is related to the imperfection of the currently widely used tools That lead to errors related to the human factor. The reasons for errors when measuring the diameter of trunks with a forest measuring fork are considered. The results of measuring the diameter of the barrels with the proposed tool are presented. It is proved that the internal walls of diopters are made at a certain angle, which will allow to level the error of the observer's visual acuity to maintain the accuracy of measurements within 2% .

The use of the developed optical tool will increase the accuracy of measuring the diameter of the trunk by almost 2 times, which will have a positive impact on the accuracy of determining a number of taxational characteristics of trees associated with the diameter of the trunk. This is confirmed by field experiments.