

COMPUTERS METHODS OF TREATMENT OF INFORMATION AT ANALYSIS OF ANNUAL RINGS OF TREE

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Introduction. Annual rings are the of growth woods, which are visible on the transverse sections of trunk, branches and roots of arboreal plants. The width of annual rings depends on the temperature of environment, amount of falling precipitations out, number of suns days and etc Age of plant influences on the thickness of rings. It is possible to define age of tree, and a climate and weather on the amount of annual rings and their width.

Aim. The ordinary methods of measuring of width of rings occupy heap of time. The computers methods of registration, measuring and analysis of rings are offered in our work.

Materials and methods. The following algorithm is offered:

1. A digital camera does the picture of cut of tree.
2. A two-dimension numerical matrix which describes the image turns out by the mathematical program.
3. A column or of matrix, which is describing the distributing of intensity along a diameter, is selected.
4. The co-ordinates of maximums (or minimums) of intensity, which is describing the annual rings, are determined.
5. The width of annual rings is calculated. The graph of dependence of width of rings on time is built.
6. The graphs of width of rings, temperature of environment, amount of precipitations are compared.
7. The climatic descriptions of the explored temporal interval are determined (changes of temperature, precipitations and etc) by mathematical models.
8. The prognosis of further changes of climate in the looked region after is done.

Results and discussion. Offered and tested computers methods of measuring of width of annual rings of tree and data processing.

Conclusion. The use of digital chamber and mathematical computer programs allows to improve the process of measuring of annual rings of tree and treatment of the results.