

Monitoring forests with satellite, remote sensors, and terrestrial measurements are active due to the forests' great ecological and economic importance. The subject of our research is the reflectance of deciduous and coniferous forests, based on the results of terrestrial measurements by a spectroradiometer in the visible part of the electromagnetic spectrum (EMS) of 400–700 nm. One of the tasks is to show the reflectance of forest vegetation with continuous smooth curves obtained by constructed cubic splines. Interval mathematics was also used as mathematical support for obtaining the continuous representation of the center reflectance values and comparison with corresponding mean values of reflectance given by the spectroradiometer. The field of research is the Pester plateau, which represents the center of biodiversity in terms of richness and diversity of forest vegetation. Their center reflectance values higher than the corresponding values obtained using the spectroradiometer have been researched. Factor analysis of the reflectance of forests has been performed and two factors have been separated. This paper aims to find a mathematical model of forest reflection analysis that facilitates forest classification and, based on the range of the reflection, assessments the health status of the forest.