DENDROCLIMATOLOGICAL RESEARCH IN OAK ,S (Quercus frainetto Ten.) FORESTRY IN ŠUMADIJA-region-(Central Serbia) AS A BASIS FOR EVALUATION OF CLIMATIC CHANGE

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Abstract

Abstract: In this work present study to describe the survey of climatic change in the case in Šumadija-Central Serbia. Climate change due to a fragile ecosystem in semi-arid, and arid region such as Serbia is one of the most challenging climatological and hydrological problems. Dendrochronology, wich uses tree rings to their exact year of formation to analyse temporal and spatial patterns of processes in the physical and cultural sciences, can be used to evaluate the effects of climate change. In this study, the effects of climate change werw simulated using dendrochronology (tree rings) and an artificial neural network (ANN) for the period from 1900—2015. The present study was executed using the (Quercus frainetto Ten.). Tree rings width, temperature, and precipitation were the input parameters for the study, and climate change parameters were the outputs. After the training process, the model was verified. The verified network and tree rings were used to simulate climatic parameter changes during the past times. The results showed that the integration of dendroclimatology and an ANN renders a high degree of accuracy and efficiency in the simulation of climatic change. The results showed that the climatic of the study area changed from semiarid, to arid, and its annual precipitation decreased significantly.

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