



Biomass allocation along tree stems in relation to environmental conditions

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Traditional tree parameters measured by foresters are tree diameter at breast height and tree height. Allocation of biomass to other parts of trees is usually estimated using empirically derived relationships. These are considered to be constant over time. However, current changing climatic conditions and climate extremes may cause changes in allocation, which has already been indicated in some studies of herbs and tree seedlings. Nevertheless, the data from mature trees are still rare. Our study aims to fill the gap in this area by analysing biomass allocation along tree stems over a period of several years. The analysed data represent the radial growth of beech trees at four different heights along their main stem axes. The values of radial growth were derived from the continual measurements of stem diameters at different stem heights with band dendrometers during the period from 2014 to 2016. The years differed in their weather conditions, which allowed us to analyse the impact of climatic conditions on the biomass allocation along tree stems. The results of this study can enlighten how the biomass allocation in mature trees responds to the changes in climatic conditions and to drought, which is one of the most threatening climate extremes of Central European forests.