



## **Impact of the 2013-2015 weather variability on seasonal growth dynamics and daily stem-size changes of three coexisting broadleaved tree species**

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Dendrometers are measurement devices that continuously monitor stem-size changes of trees without invasive sampling of the cambium. Dendrometers record both irreversible tree growth as well as reversible signals of stem water storage and depletion, making them important tools for studying tree water status, tree physiology and short-term growth responses of trees to weather fluctuations. In this study, a three-year dendrometer dataset (2013-2015) is used to study seasonal growth dynamics and daily stem-size changes of three coexisting broadleaved tree species (common hornbeam (*Carpinus betulus* L.), European beech (*Fagus sylvatica* L.), and pedunculate oak (*Quercus robur* L.)), growing in an unmanaged forest in northeastern Germany. Seasonal growth patterns (i.e. growth onset, cessation and duration) are analyzed in relation to environmental conditions, and forest meteorological factors driving daily stem-size changes are identified. Following dry conditions in 2014, especially the growth of beech was reduced. Oak was less affected, and displayed a distinct early growth onset for all study years.