

## The effect of precipitation and temperature anomalies for the Central-European forests based on Collection 6 MODIS data

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Forest phenology and productivity is intimately linked with the actual weather conditions, and in the long term with the local climate. Our current understanding on the environmental control on spring leaf-out and autumn senescence is incomplete. Causes of the interannual variability of tree growth and forest carbon balance are not well understood as well. Satellite remote sensing provides a feasible way to monitor and study the changes of forest functioning in general and to understand its relationship with the climate fluctuations.

In the presented study the latest version (Collection 6) of the Enhanced Vegetation Index (EVI) and the Normalized Difference Vegetation Index (NDVI) products calculated from measurements of the MODIS sensor onboard the NASA Terra and Aqua satellites are used to characterize forest activity and its interannual variability in Central Europe (Hungary and Croatia). The applied EVI and NDVI dataset is part of the MOD13 product of NASA and covers the 2000-2015 time period. The newest, Collection 6 dataset is free from the sensor degradation effect (that was present in previous versions) which can contribute to the better characterization of the changes in forest phenology. Using the FORESEE climatological database the effects of drought is studied on the NDVI and EVI variations. Possible lagged effect of severe drought on NDVI variability during the consecutive years is studied at the selected sites. Drivers of forest phenology are studied in terms of linear relationships between temperature and onset/offset of the growing season.