



Development of a millennium-length density chronology for the Pindus Mountains in Greece

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Tree-ring maximum latewood density (MXD) chronologies, shown to be good climate predictors, are an important proxy for reconstructing annual climate variability over the past millennium. Compared to frequently used tree-ring width (TRW) data, MXD has been shown to contain a stronger climate signal as it is less biased by biological memory effects. In the northeastern Mediterranean region, MXD records cover the Mount Olympus region in Greece (1521-2010, Klesse et al. 2014) and the Pirin Mountains in Bulgaria (1768-2008, Trouet et al. 2012) and contain a strong summer temperature signal revealing the great paleoclimatic potential. However, millennium-length MXD chronologies in this region are missing. The compilation of samples from living and relict *Pinus heldreichii* trees at Mount Smolikas in the Pindus Mountains in Greece enabled the development of one of the longest high-elevation TRW datasets in the Mediterranean (575-2015, 185 living and 133 remnant trees). Based on this work, we started measuring wood density using the DENDRO₂003 X-ray instrumentation from Walesch Electronic to develop a millennium-length density chronology. The climate signals inherent the new MXD chronology will be assigned by calibration of the chronology against regional instrumental climate data and the chronology will be transferred into a climate reconstruction.