



Wood anatomical parameters of lowland European oak and Scots pine as proxies for climate reconstructions

Daniel Balanzategui (1), Karl-Uwe Heußner (2), Tomasz Wazny (3), Gerd Helle (1), and Ingo Heinrich (1)

(1) GFZ German Research Centre For Geosciences, Sect. 5.2 Climate Dynamics and Landscape Evolution, Potsdam, Germany (heinrich@gfz-potsdam.de), (2) Deutsches Archäologisches Institut, Scientific Department of the Head Office, Berlin, Germany, (3) Institute for the Study, Restoration and Conservation of Cultural Heritage, Nicolaus Copernicus University, Torun, Poland

Tree-ring based temperature reconstructions from the temperate lowlands worldwide are largely missing due to diffuse climate signals so far found in tree-ring widths. This motivated us to concentrate our efforts on the wood anatomies of two common European tree species, the European oak (*Quercus robur*) and Scots pine (*Pinus sylvestris*). We combined core samples of living trees with archaeological wood from northern Germany and Poland. We measured approx. 46,000 earlywood oak vessels of 34 trees covering the period AD 1500 to 2016 and approx. 7.5 million pine tracheid cells of 41 trees covering the period AD 1300 to 2010. First climate growth analyses indicate that both oak earlywood vessel and pine tracheid parameters contain climate signals which are different and more significant than those found in tree-ring widths. Preliminary results will be presented and discussed at EGU for the first time.