Spatio-temporal variation of earlywood vessel features of *Quercus robur* L. along a climatic gradient in the Northwestern Iberian Peninsula

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Common European oak (*Quercus robur* L.) reaches its southwestern distribution limit in Europe close to the Northwestern Iberian Peninsula, where the transition to Mediterranean vegetation results in a progressive substitution of this species as xeric conditions increase. For this reason, xylem adaptations to drought conditions are relevant for the survival of these oaks, while their analysis by means of dendrochronological techniques can be useful to study their behavior in changing environments.

For this work, we selected a network of 12 sites distributed all along Galicia (NW Spain), trying to characterize the transition to the Mediterranean climate within the region. Earlywood vessels were measured for 10 trees per site for a common period of 20 years, and combined into several growth variables combining vessel size and numbers (mean and maximum vessel area, number of vessels, total conductive area and conductivity), also considering the position within the ring. We used these data to build chronologies for each growth variable and site, which were compared by multivariate techniques.

The results showed that vessel characteristics varied among sites according to the prevailing conditions along the gradient. Similarly, the comparison of time series provided a more detailed picture of the influence of climate on the adaptations of xylem anatomy. In summary, this work constitutes one of the first attempts to apply quantitative tree-ring anatomy to a network of site chronologies, and can be of relevance to the study of global change.