

Roberta D'Andrea

(University of Limoges, France)

Where did the timber frame come from? A preliminary multi-variable dendroprovenancing study on living oak trees

Wednesday, December 8, 2021 - 12:00pm to 1:00pm Room: Zoom Only

To date, dendroprovenancing studies have been conducted using almost exclusively tree-ring with (TRW) chronologies. Floating archaeological series are usually crossdated against a network of master chronologies. The highest correlation statistics are used to associate the floating archaeological series to a specific geographic area and to determine the more probable provenance of a wooden artefact. However, this approach shows some limitations (e.g. patterns with complacent rings, micro-environmental factors having a higher influence than climate on TRW series), and several methods have been developed over the last decades to increase the precision of the dendroprovenancing analyses.

A study focusing on timber-framed houses in Limoges (France) is currently being carried out to pinpoint the exact source areas of construction timbers, and consequently to understand how local forests were exploited and managed for housing needs in the past. To reach these goals, four sub-regional chronologies are being developed, and the living oak trees included in these datasets have been used to test the potential of wood anatomy for provenancing studies. Time series of anatomical variables have been produced, and the PCGA (principal component gradient analysis) approach (Buras et al. 2016) has been used to cluster the series based on ecological gradients. The results show that combining TRW (latewood) and anatomical (cell density) variables allows to assign trees to their location more efficiently than using TRW alone.

