

# Supplying wood for timber-framed houses in Limoges (France)

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## 1 The PhD project

The present PhD project is part of a collaborative research program developed by the *Laboratoire de Géographie Physique et Environnementale* (University of Limoges), in cooperation with other institutions such as the city of Limoges. This multidisciplinary framework is designed to address the history of Limousin’s woodlands by combining different approaches (geohistorical, anthracological, dendrochronological and archaeological). In this context, the timber employed for the construction of Limoges’ historical houses represents a valuable source of information to document the regional

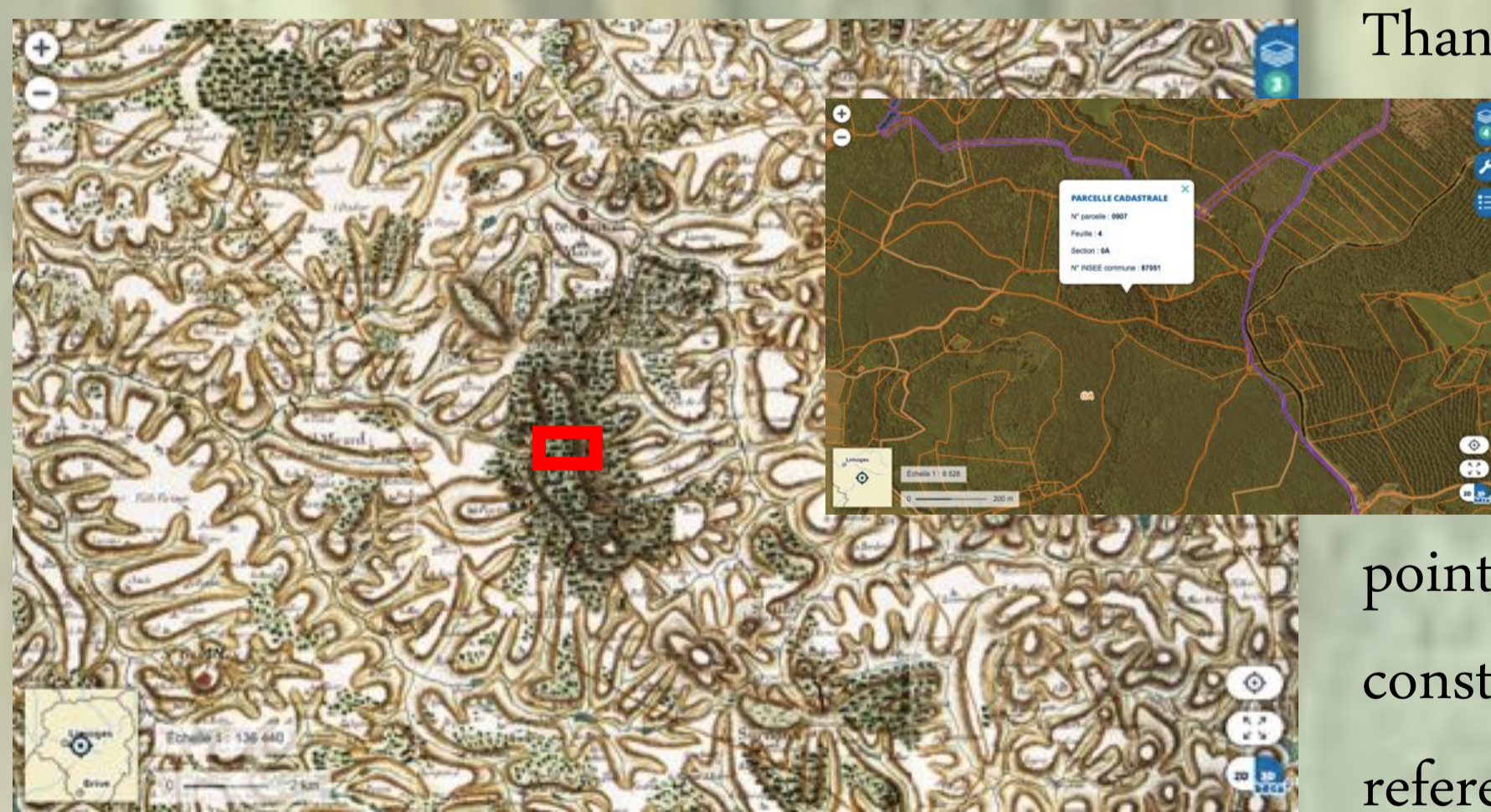


forest history between the fifteenth and the nineteenth century. Since all the city is dotted with a large number of well-preserved timber-framed houses, the dimensions of this dendrochronological proxy are believed to be exceptionally vast. An in-depth analysis of the oak timbers is therefore expected to expand our current knowledge on the relationship between Limoges’ past societies and forest landscapes. In particular, my PhD project aims at providing insights into the history of forest exploitation (e.g. types of woodland

managements) and at reconstructing past timber trade networks. In order to retrieve the origins of construction timber, sub-regional reference chronologies will be developed from (multi)centennial-old oak forest stands located nearby Limoges and the spatial accuracy of dendroprovenancing will be increased by testing different indicators (see methodology). Consequently, we believe that this project will represent a valuable contribution to the dendroprovenancing studies so far conducted in Europe.

## 2 Sampling living trees

Map of Cassini (Marie-Antoinette’s version, 18<sup>th</sup> century)



Thanks to a diachronic analysis of old maps ([www.geoportail.fr](http://www.geoportail.fr)) and aerial photographs, four forest stands roughly distributed along the cardinal points have been selected for the construction of sub-regional reference chronologies.

## 3 Sampling timber-framed houses

An exhaustive inventory of all the timber-framed houses, kindly offered by the city of Limoges, has been used to select the most suitable structures for the



dendrochronological analysis. In order to choose the sampling strategy that accounts for the peculiarity of each house, a preliminary survey which includes a stratigraphic analysis is systematically conducted in each building. Core samples are usually collected from ceiling beams; when possible (for instance, when a restoration work is carried out), slides are cut from wall architectural elements, which are usually smaller and therefore likely to come from different supply sources.

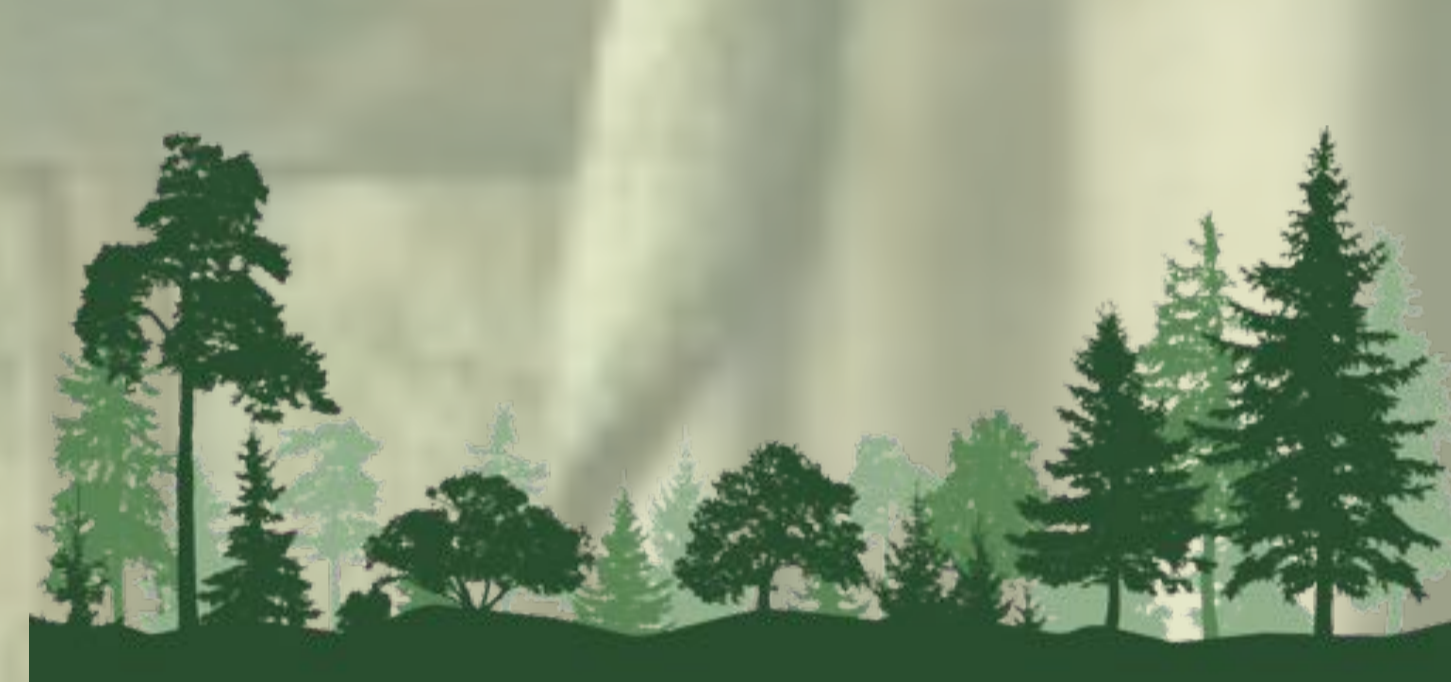
## 4 Dendroprovenancing method

Given the proximity between the selected forest stands and the city of Limoges, we decided to couple several indicators in order to increase the accuracy of dendroprovenancing. These will include:



- Tree-ring widths
- Wood anatomical features
- Wood isotopic composition

For each indicator, individual series computed from historical artefacts will be compared with each reference chronology and hypotheses on provenance will be inferred from visual cross-dating, statistical analyses (coeff. of correlation, TTest, Gleichläufigkeit (GLK) value, etc.) and wood isotopic composition.



How were woodlands managed? Was timber floated or transported to the city in a different way?



\*Borders of the French department Haute-Vienne.

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