



SINA

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14th Austrian

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Health and Environment Department**

**University of Natural Resources and Life Sciences
Department of Chemistry (VIRIS Lab)**

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11 Oral Presentation

DIFFERENTIATION OF WOOD ORIGIN IN THE AUSTRIAN ALPS FOR THE DETERMINATION OF POSSIBLE GROWTH REGIONS OF PREHISTORIC WOOD

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Wood artefacts from a prehistoric salt mine in Hallstatt, Austria, present a unique archive of information on Bronze and Iron Age mining. As trade is assumed for certain prehistoric tools the analysis of stable isotope signals of the elements C, O and H has been applied to investigate the geographic origin of these artefacts, in order to allow conclusions on trade routes.

In addition to Hallstatt, 26 locations in Austria were selected for sampling of modern trees based on known settlements in the time period of interest. The locations are located in Upper Austria, Salzburg, Styria and Carinthia. Drill cores from four tree species present in the archaeological finds (*Picea abies*, *Abies alba*, *Fagus sylvatica* and *Quercus* sp.) were sampled at the locations upon availability. The bulk wood samples were analysed for their C, O and H isotope ratios by isotope-ratio mass spectrometry.

The isotopic signature obtained from the modern trees enables a classification of the modern samples in two groups: One represents the locations of the northern and central Alps and the second one contains the locations of the southerly Alpine ones, the locations in the northern foothills of the Alps and the non-Alpine one. Prehistoric wood artefacts assumed to stem from the Hallstatt mine immediate vicinity show almost identical isotope patterns as modern wood from Hallstatt. Thus it is assumed that prehistoric wooden artefacts from other localities will have a very similar isotope pattern to modern wood from these localities and can be compared to and correlated with the modern wood isotope patterns.