



Dendrochronology, ^{14}C time-scale and mechanisms of rapid climate change during the last deglaciation

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Our Euroclimate project 'Dendrochronology, ^{14}C time-scale and mechanisms of rapid climate change during the last deglaciation' (Tree-14) is presented. In the collaboration we extend the radiocarbon calibration back into deglaciation, based on tree-ring chronologies, and we obtain information on climate change events from tree-ring proxies and ^{14}C fluctuations. The tree-ring chronologies are being built in the

tree-ring laboratories of Stuttgart-Hohenheim, Zurich and Aix-en-Provence. The absolutely dated chronology has been extended back to 12.593 years BP. For the Late Glacial well replicated, floating chronologies exist, starting at ca. 14.500 cal BP and extending for two centuries into Younger Dryas. We obtained decadal ^{14}C ages of high precision (± 25 years) for this interval. From a comparison to the marine ^{14}C data set of the Cariaco basin we infer a substantial increase in the marine reservoir age for the tropical Atlantic, at least during Allerød. Dendro-climatological evaluation is based on techniques to preserve long-term climate signals.

Extensive fieldwork in Italy, Romania and Hungary has provided new finds of subfossil logs, with sequences dating into early Bølling, and even beyond the LGM.

Using the common signal in the fluctuations of ^{14}C in tree-rings and ^{10}Be in ice cores will allow a comparison of the respective time-scales.