

Comparison between Radiocarbon and Dendrochronology Ages Obtained on a 700 Years Tree-Ring Sequence from Northern Romania

Authors : G. Sava, I. Popa, T. Sava, A. Ion, M. Ilie, C. Manailescu, A. Robu

Abstract : At the RoAMS laboratory in Bucharest we have looked for a head-to-head meeting between AMS radiocarbon dating and dendrochronology dating, aiming to point out and explain any differences or similarities that might appear between their output results. As a subject of this investigation, we have fixed our attention on a sequence of tree rings spanning on a period of 700 years, starting with 1000 AD. The samples were collected from the northern Romanian territory within Moldavia region, and were provided by the 'Marin Dracea - National Institute for Research and Development in Forestry'. All the 23 single ring wood samples were radiocarbon dated using alpha-cellulose extraction, followed by graphitization in an AGE3 installation. A wiggle matching procedure was applied to reduce the radiocarbon uncertainties for the calibrated ages. The results showed a good agreement on 3 out of 4 wood cores, the age-shifting of one of the wood cores being interpreted as an uncertain dendrochronology matching, which was further corrected.

Keywords : wiggle matching, tree-ring radiocarbon dating, dendrochronology, AMS radiocarbon dating, radiocarbon dating in Romania

Conference Title : ICDRD 2018 : International Conference on Dendrochronology and Radiocarbon Dating

Conference Location : London, United Kingdom

Conference Dates : March 15-16, 2018