

Coring and chronology of Mohoš peat bog, East Carpathians

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This work focuses on building a high-resolution age-depth model for quantitative paleoclimate study from the Mohoš peat bog, East Carpathians. Peats are important archives for Quaternary science, because they preserve environmental changes. To study the chronology of peat profiles the key is in the precise coring and reliable dating. However, many studies dealing with coring and radiocarbon dating of peat deposits they often shown problems with the proper methods and material.

With our novel coring technique we reached undisturbed and uncompressed peat cores from the Mohoš bog. A 10 meter deep peat profile was drilled in 2012 using a modified technique of a piston corer. The core presents a continuous peat profile from the last 11.500 cal. yr BP.

After subsampling ash content and loss-on-ignition (LOI) were measured. The chronology was based on AMS radiocarbon analyses of the separated *Sphagnum* samples from different depths of the profile. The peat samples were wet sieved (280-40 µm) to avoid contamination by rootlets and mud. Dry *Sphagnum* samples for AMS dating were prepared using the classical acid-base-acid (ABA) method completed with an oxidative bleaching step to get clean cellulose. *Sphagnum* cellulose samples were converted to CO₂ and later graphite and measured by EnvironMICADAS accelerator mass spectrometry (AMS) in Hertelendi Laboratory (Debrecen, Hungary). The age-depth model was obtained with the use of BACON software.

Fine peat accumulation rate changes (sections with lowest accumulation values) were observed along the profile. Ash content is between 0.02 and 8 %. Based on the chronology in further studies we want to focus special intervals to investigate environmental changes in the Holocene.