Geophysical Research Abstracts
Vol. 19, EGU2017-8024, 2017
EGU General Assembly 2017

The role of fire in the Central European lowlands during the Holocene: what we know so far

Elisabeth Dietze (1), Martin Theuerkauf (2), Michał Słowiński (3), Achim Brauer (1), and the CEL synthesis team and the Czechowskie fire biomarker Team

(1) German Research Centre for Geosciences GFZ, Section 5.2 Climate Dynamics and Landscape Evolution, Potsdam, Germany (edietze@gfz-potsdam.de), (2) University of Greifswald, Institute of Geography and Geology, Greifswald, Germany, (3) Polish Academy of Sciences, Stanisław Leszczycki Institute of Geography and Spatial Organization, Warsaw, Poland

The modern landscape of the Central European lowlands results from the complex interaction between its geological and geomorphological configuration that developed during and after the last glaciation as well as its Holocene vegetation history, climate evolution and human activity. Although also fire is known to play a fundamental role in many ecosystems of the world and to be one of the major tools for anthropogenic land cover change, Holocene paleofire history has only marginally been studied in the area of the Central European lowlands so far.
Here, we will present the first attempt to establish a Holocene fire synthesis for the Central European lowlands. In a first step, we aim to reconstruct the regional Holocene fire history by comparing available sedimentary charcoal records from lakes and peatlands of northern Germany, northern Poland and the Baltic countries. We will present the current knowledge on the role of fire during different time windows such as the Neolithic period, the Medieval time and the onset of industrialization. In addition, we will discuss the interaction between fire, human activity, vegetation and climate change during the last 250 years in more detail using high-resolution records of sedimentary charcoal and the fire biomarkers levoglucosan, mannosan and galactosan from the annually laminated lake sediments of Lake Czechowskie, northern Poland.

Teams: CEL synthesis - A. Feurdean, M. Obremska, M. Lamentowicz, K. Marcisz, W. Dörfler, I. Feeser, N. Dräger, F. Ott, T. Giesecke, S. Jahns, L. Shumilovskikh, S. Veski, M. Wieckowska-Lüth, J. Wiethold; Czechowskie fire biomarkers - E.C. Hopmans, L.T. Schreuder, M. Obremska, A. Pieńczewska, O. Blarquez, F. Ott, D. Brykala, S. Schouten