

EGU2020-11726

<https://doi.org/10.5194/egusphere-egu2020-11726>

EGU General Assembly 2020

© Author(s) 2020. This work is distributed under the Creative Commons Attribution 4.0 License.



Charcoals as archives of soils pyrogenic events

Alexandra Golyeva and Dmitry Petrov

Institute of Geography, RAS, Moscow, Russian Federation (pd437807@mail.ru)

The fires themselves have become important factor, which controls ecosystems, pedological processes and climate.

Our work are aimed as the decoding of the soil archives, which contain unique information about the direction and rates of the soil formation; the interactions between fire and vegetation composition and studying the long-term dynamics of vegetation.

The primary study objects are charcoal layers in pyrogenic soils, preserved in particular geomorphological traps of various karst landscapes in the North part of European Russia. Such layers, as pyrogenic archives are represented by several (up to dozens) interlayers, that are separated by buried soil profiles.

The main method is pedoanthracological. About 100 charcoal particles from all interlayers in different podzol soils were studied. The age interval was between early Holocene and modern time.

Results. The bulk of all coals was represented by pine, the rest by spruce. Coals belonging to other tree species (for example, birch) were absent. That is, only indigenous coniferous forest always burned.

Conclusions. Over the entire period of soil and sediment formation, the vegetation cover in the region has not changed. It is possible that the time period required to restore indigenous forests and the chronology of the cyclicity of fires are interconnected.

The study was supported by the Russian Foundation for Basic Research. Project No. 19-23-05238.