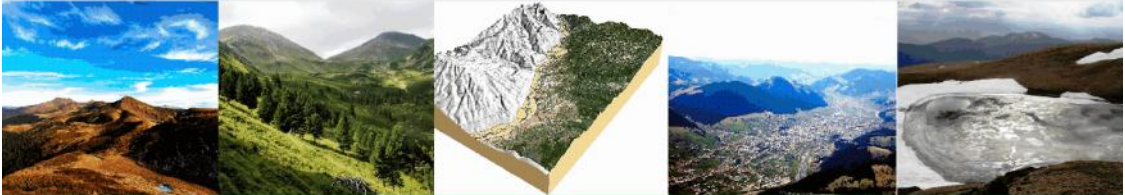




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Macrocharcoal analysis of a 4200 year old lake sediment profile from Northern Romania - fire regimes and climate implications

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Macroscopic charcoal particles, magnetic susceptibility and AMS C14 dates were performed on a sediment sequence from a small subalpine lake (Buhaescu Mare), Rodnei Mts. in order to reconstruct fire regimes in the area. Specifically we aim to distinguish between natural fire activity and human driven fires. Buhaescu Mare lake, also known as Rebra lake (0.4 ha; 1920 m a.s.l.,) is today surrounded by mire vegetation, Ericaceae, *Carex* and *Pinus mugo* patches further away, being situated just above the current tree line. The sedimentary profile, with a total length of 98 cm is composed of clayey silt (98-80 cm) and gyttja (80-0 cm). Magnetic susceptibility was used to support the charcoal results, this parameter being expected to rise during episodes of intense fire and subsequent erosive events.

The results from the charcoal record indicate periods of high charcoal activity at about 4200 cal. BP, 3000 cal. BP, 2700 cal BP, 2000 cal BP and 1350 cal BP. and point to a succession of warm/dry and cold/wet periods. The increase in charcoal particles over the last 2000 years was probably related to human impact, but this remains to be documented through the analysis of pollen and coprophilous fungi record.