

**Luminescence dating of Sukhaya Mechetka Middle Paleolithic site  
(preliminary results)  
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The Middle Paleolithic site Sukhaya Mechëtka is located on the right bank of the Lower Volga river in the Volgograd city. The exposed sediments show a sequence of mainly silt-rich fluvial deposits and intercalated, partly organic-rich palaeosols, reflecting various cycles of fluvial deposition and interruptions in fluvial aggradation. Not only being an important palaeoenvironmental archive, the site has attracted the attention of Paleolithic researchers since its discovery in 1951 by geologists A.I. Koptev and M.N. Grishchenko [1, 3, 5, 7, 8, 9, 12]. The data of the site – both assemblages and chronostratigraphic information – can be considered as reference for open air paleolithic sites of Central and Eastern Europe. The site acquired this significance largely as a result of the presence of only one perfectly preserved cultural layer, which lies in clear stratigraphic conditions [12]. The cultural layer is overlain by more than 23 m of mainly silt-rich fluvial deposits and is therefore well preserved and remained almost unaffected by post-depositional cryoturbation/ reworking processes within the last glacial cycle [12; 9; 7]. Flint and quartzite tools assemblages and field documentation archives created by M.Z. Panichkina and S.N. Zamyatnin, allow a reconstruction of the life of the settlement of Middle Paleolithic hunters for a limited time interval, which is confirmed by preliminary results of planigraphic and technological analysis using refitting: Sukhaya Mechëtka is interpreted to be a practically unchanged cast of the life of an individual Neanderthal community [3]. There are some descriptions of the assemblages according to traditional schemes [12; 1; 9; 3] which indicate that the typological features of Sukhaya Mechetka assemblages deal with Micoquian (or Keilmessergruppen) morphological and technological patterns. However, the chronological framework of site still remains unclear and is until now based on partly controversy radiocarbon ages and stratigraphical information [9; 7]. To get more precise insights into the chronology of Sukhaya Mechëtka, we now used pIR225 luminescence dating on polymineral fine-grains. The preliminary results point to a deposition of the sediments bracketing the cultural layer at the transition from MIS 4 to MIS 3 and/ or during early MIS 3. As the cultural layer is also connected to a paleosol, the luminescence age estimates provide first insights into the period of site occupation as well as the timing of climatic shifts and potentially sea level fluctuations of the nearby Caspian Sea [12; 9; 11; 10; 2; 4; 6].

Future work will concentrate on collecting highly resolved sedimentological and also additional chronological data from the section to better understand the site formation and to connect the interplay between climatic shifts, the response of the sedimentological system and presence and absence of Neanderthals.

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