

OSL dating of sediment core in Olgoi lake, Mongolia

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In the southern part of Mongolia, there are many lakes in the basin between mountain ranges, which is called “Valley of the Lakes”. These lakes experienced lake level fluctuations during the Quaternary period. This lake level variation is considered important information to understand climate change. The influx from the Khangai Mountains is a major source of water for the Valley of the Gobi lakes, a large southern basin. Olgoi lake is the research target of this study and locates closer to the summit of the Khangai mountain range than other lakes of Valley of the Gobi lakes, so it is highly likely that it reflects influx sensitively. A sediment core was collected from Olgoi lake to investigate the environmental change of the region. In this study, OSL dating of quartz was carried out to date core samples from Olgoi lake. This Core sample showed the age value of 0.7 to 10 ka covering the Holocene. In addition, it is suggested that the sedimentation of gravels, which is the most characteristic feature of the lower part of the Olgoi lake core sample, was related to the Holocene rapid temperature change events. There is a large gap in age values in this core sample at 7.5-9.0m. There is a high possibility that it reflects past sedimentary environment and even the climate, but I could not reach the final argument by the ages obtained in this research. To understand the complex transition of sedimentary environment of Olgoi lake, high resolution analyses of sediment characteristics and precise age control would be necessary.

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