

HQR010-12

Room: Exhibition hall 7 subroom 1

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## Lake level change and environmental evolution in Balkhash Lake and Aral Sea in Central Asia

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For the past environmental study in Ili Delta and Central Asia, Balkhash Lake and Aral Sea are situated in the important position.

Continuous lake sediments are very useful long-range recorder of past environmental change, and provide continuous lake level trends based on diatom, ostracoda, dinoflagellata, and geochemistry. Balkhash lake cores also gave us the lake level curve during the last 2000 years. However, that is a relative change. Doesn't it include some big event, very high or very low lake level, big floods, strong sand storms ?

For checking some big environmental events, we are taking various approaches.

1.Reconstruction of lake level change during the last 2000 years using diatom and ostracoda analysis

2.Higher lake level using gravel bars

3.Lower lake level using valley and erosional surfaces clarified by seismic survey

4.Lower lake level and submergence process using submerged sand dunes

5.Higher river discharge using flood deposits and terraces

6.Dating methods such as C-14, OSL, Cs-137, Pb-210, secular variation of magnetism

7.Various factors during the last 100 years, using records of lake level, river discharge, temperature, precipitation, and human activity

8.Long range variation trend using pollen, diatom, ostracoda, and comparing with tree ring and mountain glacier

From these data, we try to compare the variation trends between Balkhash Lake and Aral Sea, and consider the changing trend in environment and its cause.

Keywords: Balkhash Lake, lake level change, environmental change, diatom, ostracoda, submerged sand dune