

Geomorphological evolution in arid and semi-arid regions, and its application to Quaternary environmental reconstruction

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There are typical geomorphologic features in arid and semi-arid regions. In this session, we discussed the relationship between Geomorphological evolutions and climatic changes during the Quaternary in those regions. The one of the most drastic changes of geomorphology is an inland saline lake. It forms at the closed basin, where no river flows from a basin to outside. A water level and water salinity have been changed corresponding to the change of climate, especially precipitation and evaporation. The environmental changes at big lakes might be very serious social problems, however small lakes and marshes would be more suitable for environmental reconstruction during the Quaternary. The drillings of lake deposits and lake terraces are very sensitive indicators for reconstructions of water levels and water salinities.

The other important geomorphologic features are a pediment and a semiarid-alluvial fan. They are formed by typical precipitation pattern in arid and semi-arid regions. Our surveys made clear the relationship between formative histories of those slopes and lake environmental changes in closed saline lakes.