Geophysical Research Abstracts, Vol. 7, 09119, 2005
SRef-ID: 1607-7962/gra/EGU05-A-09119
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Reconstruction of the aral sea environmental variability of the last 1500 years

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Drilling of Aral sea sediments has been performed in 2002 and 2004. We retrieved 15 cores up to 6.5 m long from the Small (northern) Aral and Large (southern) Aral Seas. Pollen, diatom, chironomids, organic matter, selected element distributions and lithological microlamination have been analysed for characterizing the environmental changes. Furthermore we performed rock magnetic analysis. Palaeobiological data are used for reconstructing humidity, and relative air paleotemperatures. Rock magnetic data (paramagnetic component) have been used for estimating the terrigenic input to the basin. Furthermore we used the biogenic magnetic component to estimate palaeobioproductivity. The age model is based on AMS ^{14}C dating and reconstructed palaeosecular geomagnetic variation (PSV). Good correlation of the PSV data from the Aral Sea sediments with nearest PSV records supports ^{14}C dating on organic matter extracted from the sediment indicating that previously published radiocarbon data have to be corrected for the “hard water effect” (reservoir effect). (The research was supported by INTAS grant Aral-1030.)