



## **HIGH-RESOLUTION GEOPHYSICAL INVESTIGATION OF THE SEDIMENTARY ENVIRONMENTS ON THREE ELEVATED PLATEAUS IN LAKE BAIKAL (SIBERIA).**

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Lake Baikal (Russia) represents an important lacustrine site with an extremely long and uninterrupted sedimentary record that can be exploited for high resolution paleoclimate studies. High-resolution reflection seismic data (sparker and 3.5 kHz) and side-scan sonar images collected in the framework of the CONTINENT project, combined with newly compiled bathymetry data, permit to characterize in great detail the sedimentary environment of the CONTINENT coring locations:

1. Continent Ridge, an isolated high located in the southern part of the Northern Baikal Basin, is characterised by a mostly uniform and quiet, undisturbed sedimentation. The margins of the ridge and the ridge itself are transected by a number of faults that influence the sedimentary cover. A disturbed interval correlates with the lower part of core CON01-603-2 (below about 7 mblf), characterised by small faults.
2. The seismic profiles of Posolsky Bank, located in the Southern Baikal Basin, indicate the presence of several unconformities. The general thickening of individual stratal packages towards the northwest may indicate two things: 1) tectonic tilting of the fault block has persisted during sediment accumulation, or 2) sediment accumulation rates on the top of the block are lower than on the deeper parts. The core CON01-604-2 contains a continuous record, dominated by the input of clastic

sediment from the Selenga River but locally also disturbed by several small-scale faults and slumps.

3. Vydrino Shoulder, located in the Southern Baikal Basin, presents a complex series of elevated ridges, separated by deeply incised channels. The channels show virtually no seismic penetration and very high-energy sonar returns, suggesting coarse sedimentary material. The plateaus are characterised by a relatively stratified sedimentation. The morphology, seismic facies and side-scan mosaic all point to a typical channel-levee environment. The description of core CON01-605-3 shows the occurrence of a thick homogeneous, structureless interval after 6 mblf, which probably represents some sort of mass-wasting deposit, in agreement with observations on the 5 kHz subbottom profiles.

With this contribution we wish to illustrate the potential of integrated, high-resolution geophysical site surveying for the selection of coring sites and interpretation of the cores.