GEOTHERMAL REGIME OF SUBWATER BOREHOLES IN LAKE BAIKAL

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In order to study paleoclimate within International Program Baikal Drilling Project three subwater boreholes have been drilled from 1993 to 1998 at a depth of 102, 300 and 673 m from a barge frozen in the ice. Besides that, such geothermal works have been carried out: temperature measurements and measure-ments of thermal conductivity of bottom sediments necessary for determination of values heat flow. Thermal conductivity of sediments has been determined in the laboratory by a thermal comparator. The instrument is based on the comparative method of mea-surements and is calibrated against the standart thermal conductivities within a range of 0.2 to 14.7 W/mK. The instru-ment allowed sounding the very surface of sediments in a core cut axially into two halves. In total 553 thermal conductivity measurements have been taken from the borehole BDP-93, 512 in BDP-96/1, 360 in BDP-96/2 and 1560 in BDP-98. Lithologically the sediments are clays, diatomaceous muds with some silt and sand. Measurements by thermal conductivity comparator were paralleled by needle probing (Dr. Golubev) and the former mean was 1.5 times as great as that measured by the needle probe (1.30 against 0.88 W/mK, BDP-96). Similar discrepancy in thermal con- ductivities yielded by different methods (1.28 against 0.92 W/mK) was obtained by Japanese scientists when they investigated bottom sediments of Lake Biwa in Central Japan.ductivities