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Bench Tests of Mechanical Ice Core Drilling

Thursday 3 October 2019 14:00 (20 minutes)

Bench tests of core drilling in ice with various filling liquids were performed during the seasonal shift period of the 64th Russian Antarctic Expedition (December 2018 - January 2019) with the use of Borehole 5G drilling facilities. Experimental studies were done using the test bench developed at the St.Petersburg Mining University, that was first applied in 1994 prior to drilling Borehole G5 with the KEMS-132 mechanical drilling assembly. The test drilling was done with kerosene, with a mixture of kerosene and freon, and with organosilicon fluid. The primary objective of these tests was to assess the possibility of end-of-hole flushing and collection of cuttings in a filter unit with organosilicon fluid used as a filling liquid. This fluid is planned to replace the kerosene-and-freon mixture in drilling a new access hole to study Subglacial Lake Vostok.
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