

The 8th International Ice Drill Symposium



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Ice core drilling complications: shallow dry hole electromechanical ice coring.

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Most of complications during ice coring related to: 1) selection of a drilling technology, drilling protocol, and operators mistake 2) selection of drilling site and time of the year, 3) drill performance at specific conditions 4) unforeseen drilling conditions, 5) drilling system malfunction.

Presented materials describe problems that were observed during dry borehole (BH) shallow depth (<300 m) ice core drilling of polar, temperate and polythermal glaciers. Some of the problems took place upon drilling ice loaded with dust and pebbles. Most of complications related to drilling at relatively high temperatures and operation of drill at above the melting point air temperature.

Major subjects of the presentation:

- organization of an ice coring operation,
- penetration protocol, penetration problems,
- borehole vertical stability,
- kerf cleanup,
- causes of a drill stuck, dry and fluid unstuck techniques,
- borehole closure and borehole reaming,
- slipping antitorque,
- hard core break.

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