

FRICITION EXPERIMENT OF ICE ON ROCKS (Abstract)

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In a great ice sheet such as Antarctica, the ice will contact with the bedrock plastically, so that an apparent contact area will be a real one. Under such condition where frictional coefficient bears no meaning, specific frictional resistance becomes more important.

To gain some information on sliding resistance of the ice under a high contact pressure, a conical piece of ice was slid on the polished flat surface of rocks collected from Antarctica. Friction resistance and contact area formed at the tip of the ice were measured as a function of temperature (-1.5 to -20°C). The applied load and the sliding velocity were 5 N and $9 \times 10^{-5}\text{ m/s}$, respectively. Measured contact pressure was 30 to 100 bars and specific resistance was 3 to 30 bars for static friction and 2 to 23 bars for kinetic friction. These values increased with lowering temperature.

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OBSERVATIONS OF AN ICE STREAM ON THE SÔYA COAST, ANTARCTICA (Abstract)

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A set of glaciological observations consisting of topographical surveying, ice core drilling, aerial photography and flow rate and gravity measurements was conducted in 1981 of a small ice stream ($69^{\circ}08'S$ $39^{\circ}45'E$) discharging into Lützow-Holm Bay about 5 km north of the Langhovde Glacier on the Sôya Coast.

According to the aerial and ground surveying, the 3 km long ice stream emerging from the inland ice first flows north, then turns west at about 1.5 km upstream from the terminus which enters the Ongul Strait in a cliff-fronted snout of 0.6 km wide and 25 m high above sea level. The surface flow rate along the central streamline was estimated at over 110 m/a from two successive triangulation measurements made respectively in August and December from two theodolite stations set up on a rocky outcrop constituting the southern bank of the stream. The gravity readings revealed the thickness of the ice tongue to be 150 m near the terminus. This thickness, together with the terminus elevation, suggests that the major part of the ice tongue is not floating but grounded. Compared with other ice streams on the Sôya Coast, this stream has a similar thickness but a smaller flow rate.

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