

012 240106

Olaf Eisen

VAW

Gloriastr. 37-39

8092 Zurich

Switzerland

Abstract of Oral presentation:

O. Eisen, M. Funk

Deducing temperature distribution in the tongue of Gornergletscher from radar surveys

On the tongue of Gornergletscher, Valais, Switzerland, a supraglacial lake forms every spring at the confluence with Grenzletscher. To investigate the ice-dynamical and hydrological properties of the glacier, an extensive field campaign has been carried out over the last years.

Ice-penetrating radar surveys were used to map ice thickness and calculate bedrock topography at 3 and 40 MHz. The 40 MHz data displays a region of low backscatter in the center of the glacier. We interpret this as a core of cold ice, advected from the accumulation region of Grenzletscher into the tongue of Gornergletscher. The core reaches a maximum thickness of 180 m and extends laterally about 300-400 m. The cold-temperate transition surface can be found in a maximum depth of about 300 m.



Kommission für Glaziologie der Bayerischen Akademie der Wissenschaften

Alfons-Goppel-Str. 11

D-80539 München

☎ ++4989 23031 1195

www.Glaziologie.de/agm2006

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