

Name of research institute or organization:

**Versuchsanstalt für Wasserbau, Hydrologie und Glaziologie (VAW),
ETH Zürich**

Title of project:

Variations of the Grosser Aletschgletscher

Project leader and team:

Dr. Andreas Bauder, project leader
2-4 coworkers and field assistants

Project description:

Long-term glacier observations have been carried out to document glacier variations of Grosser Aletschgletscher:

- Since the 1880's the length changes at the glacier tongue were recorded annually.
- Starting in September 1918, the firm accumulation and mass balance was measured on Jungfraufirn. These are the second longest time series of in-situ stake measurements.
- The mass balance of the whole catchment area is evaluated with the hydrological method using runoff records which started in 1922.
- Special high precision topographic maps covering the whole catchment area of the branched glacier system have been produced repeatedly in 1926/27 and 1957. These maps are complemented by an earlier map from 1880.

In an ongoing project the length, area, volume, and mass changes are continuously observed applying modern remote sensing techniques as well as direct field measurements. In order to calculate net volume changes of high spatial resolution, photogrammetrical results from two sets of recent aerial photographs for 1980 and 1999 were compared with the topographical maps. The changes in mass on Jungfraufirn are continuously measured twice per year in spring after the accumulation season and in late summer after the ablation season. The variation of snow accumulation and melting is recorded monthly.

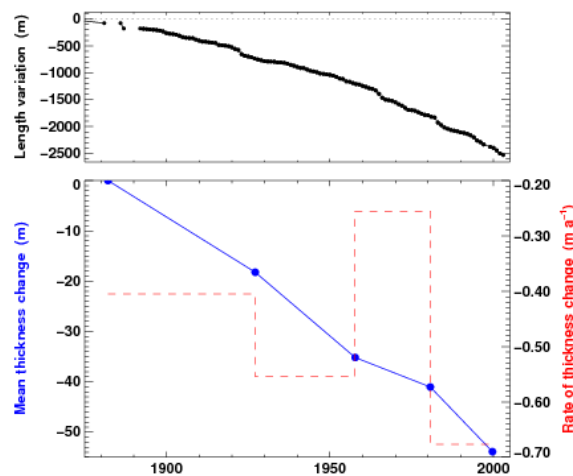


Figure: Length variation and mean thickness change of the Grosser Aletschgletscher

Key words:

Glacier measurements, firn accumulation, mass balance

Internet data bases:

http://www.vaw.ethz.ch/research/glaciology/glacier_change/gz_variations_gr_aletsch_gretsch

Collaborating partners/networks:

Swiss Glacier Monitoring Network in collaboration with Swiss Academy of Sciences (SCNAT)

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