

ORTHOPHOTO GEPATSCHFERNER, 1 : 7'500

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The production of conventional topographic maps (so-called "line maps") of glacierized areas as a tool for glaciology is complicated, expensive and time-consuming. On the contrary, orthophoto maps can be an economical alternative for the production of conventional glacier maps.

Orthophotos are differentially rectified and enlarged aerial photographs with homogeneous scale, which - unlike aerial photographs - allow measurements of straight lines and areas. By means of cartographical treatment an orthophoto map is obtained from the orthophoto. In order to preserve the details of the orthophoto as much as possible the cartographical line work has to be limited to a minimum. Necessary supplements of the orthophoto are: terrain representation, boundary lines and lettering. For the terrain representation spot heights and contour lines with larger vertical intervals than in conventional "line maps" are sufficient. For the usual scale 1 : 10'000 of glacier mapping a vertical interval of 50 m seems suitable. The glacier edge is often not clearly perceptible in the orthophoto, so it has to be extracted by photogrammetric stereoplotting.

The presented example of an orthophoto map, scale 1 : 7'500, shows a part of the Gepatschferner in the Oetzal Alps (Austria), at present the largest glacier of the Eastern Alps. For the different rectification of the aerial photographs, which were taken by a normal angle camera, an Orthoprojector GZ 1 of Carl Zeiss Co. (West Germany) was used. The glacier area is marked by a blue overprint. For the terrain representation spot heights and contour lines of vertical intervals of 20 m were chosen. White contour lines are printed in the (darker) ice-free land and blacks in the (lighter) glacier, respectively.

This example of an orthophoto map of a glacierized region was produced by the Institute of Cartography of the Technical University Munich. At the same Institute there is at present a conventional six-colour topographic glacier map of the whole Gepatschferner, scale 1 : 10'000, in preparation.