

2008

Swiss topographic maps



1:25 000

1:50 000

1:100 000

## Conventional signs

and further information  
to the topographic maps



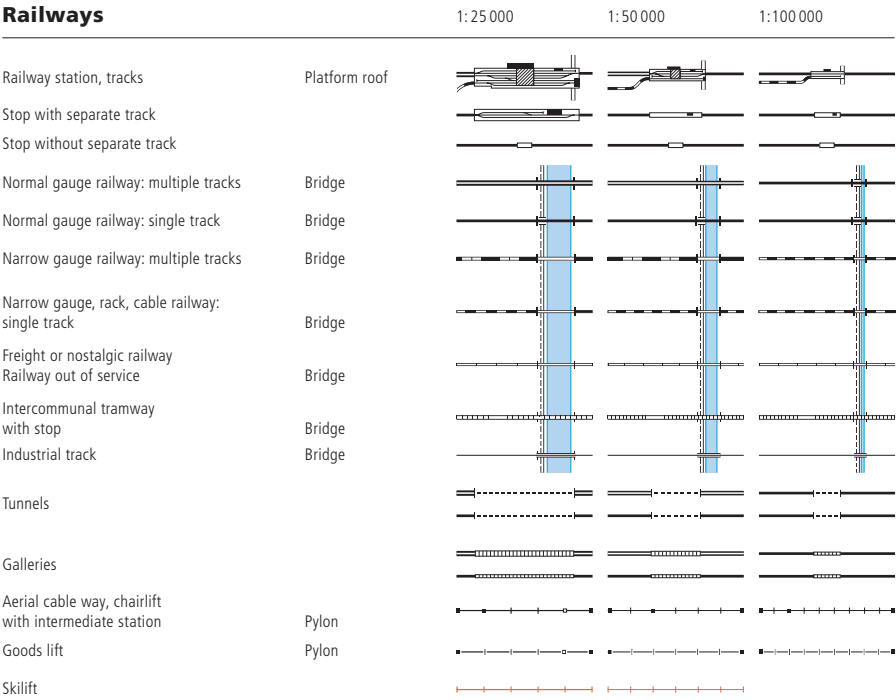
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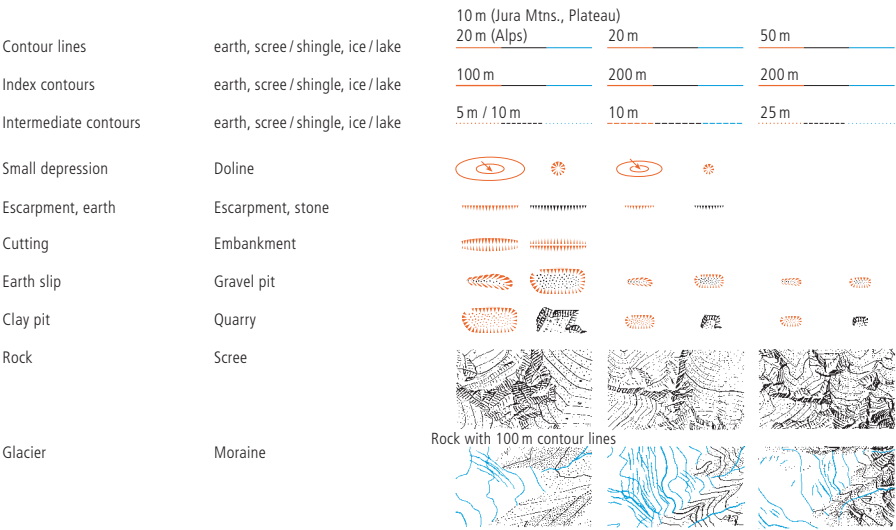
| Roads, tracks                                      |                                                  | 1: 25 000 | 1: 50 000 | 1: 100 000 |
|----------------------------------------------------|--------------------------------------------------|-----------|-----------|------------|
| Highway (divided lanes)<br>Junction                | Highway under construction                       |           |           |            |
| Rest area<br>Parking                               |                                                  |           |           |            |
| 2nd cl. highway (undivided lanes)<br>Exit / Access | under construction                               |           |           |            |
| Trunk road                                         | Main connecting road                             |           |           |            |
| 1st cl. road (at least 6 m wide)                   | conspicuous bridge                               |           |           |            |
| 2nd cl. road (at least 4 m wide)                   | conspicuous bridge                               |           |           |            |
| Suburban road (at least 4 m wide)                  | conspicuous bridge                               |           |           |            |
| 3rd cl. road (at least 2.8 m wide)                 | covered bridge                                   |           |           |            |
| 4th cl., narrow road (at least 1.8 m)              | Bridge                                           |           |           |            |
| 5th cl., path, trail, bicycle path                 | Footbridge, catwalk                              |           |           |            |
| 6th cl., footpath                                  | Passenger ferry attached<br>Passenger ferry free |           |           |            |
| Traces, mountain passage                           | Traces on glacier                                |           |           |            |
| Barrier, traffic ban                               |                                                  |           |           |            |
| Conspicuous roundabout                             | Parking lot                                      |           |           |            |
| Level crossings                                    |                                                  |           |           |            |
| Underpasses                                        |                                                  |           |           |            |
| Overpasses                                         |                                                  |           |           |            |
| Tunnels                                            | Ventilation shaft                                |           |           |            |
| Gallerie                                           |                                                  |           |           |            |
| Parklane                                           | Tank road                                        |           |           |            |
| Traces of historic road                            |                                                  |           |           |            |
| Airport, hard surface runway                       |                                                  |           |           |            |
| Airfield, grass strip                              |                                                  |           |           |            |

| Boundaries                                   |  | 1: 25 000 | 1: 50 000 | 1: 100 000 |
|----------------------------------------------|--|-----------|-----------|------------|
| National boundary with numbered markers      |  |           |           |            |
| Cantonal boundary with markers               |  |           |           |            |
| District boundary with markers               |  |           |           |            |
| Municipal boundary with markers              |  |           |           |            |
| Boundary for National Park or protected area |  |           |           |            |

Railways



Topography



Individual symbols

|                      |                     | 1: 25 000 | 1: 50 000 | 1: 100 000 |
|----------------------|---------------------|-----------|-----------|------------|
| House                | Ruin                |           |           |            |
| Remote inn           | Tower               |           |           |            |
| Greenhouse           | Storage tank        |           |           |            |
| Allotment (garden)   | Monument            |           |           |            |
| Church               | Chapel              |           |           |            |
| Cemetery             | Shrine, cross       |           |           |            |
| Cooling tower        | Wind power station  |           |           |            |
| Chimney-stack        | Castle              |           |           |            |
| Lookout tower        | Radio transmitter   |           |           |            |
| Large antenna        | Small antenna       |           |           |            |
| Camp site            | Summer toboggan-run |           |           |            |
| Sports ground        | Stadium             |           |           |            |
| Rifle range          |                     |           |           |            |
| Race course (horses) |                     |           |           |            |
| Border of an area    | Golf course         |           |           |            |
| Ski jump             | Dry wall            |           |           |            |
| Wall                 | Avalanche barricade |           |           |            |
| Cave, grotto         | Erratic bloc        |           |           |            |

Trigonometric points, spot heights

|                                                |                            |  |  |  |
|------------------------------------------------|----------------------------|--|--|--|
| Trigonometric points 1st to 3rd order and LV95 |                            |  |  |  |
| Spot height                                    |                            |  |  |  |
| Index contour                                  |                            |  |  |  |
| Lake level                                     | Spot height at lake bottom |  |  |  |

Vegetation

|                         |                                |  |  |  |
|-------------------------|--------------------------------|--|--|--|
| Forest, defined outline | Forest, undefined outline      |  |  |  |
| Scattered forest        | Isolated tree / Group of trees |  |  |  |
| Scrub                   | Hedge                          |  |  |  |
| Orchard                 | Tree nursery                   |  |  |  |
| Vineyard                |                                |  |  |  |

Hydrography

|                                       |                                                | 1: 25 000 | 1: 50 000 | 1: 100 000 |
|---------------------------------------|------------------------------------------------|-----------|-----------|------------|
| Spring                                | Stream                                         |           |           |            |
| Waterfall                             |                                                |           |           |            |
| Dry gully                             | Stream weirs                                   |           |           |            |
| River, backwater                      | River weirs                                    |           |           |            |
| Marsh                                 | Peat cutting                                   |           |           |            |
| Lake, shoreline                       | Undefined shoreline                            |           |           |            |
| Port / quay                           | Car ferry                                      |           |           |            |
| Landing pier                          | Lake level                                     |           |           |            |
| Dam                                   | Spot height at lake bottom<br>max. flood level |           |           |            |
| Lake with varying water level         |                                                |           |           |            |
| Single pressure pipeline              | Multiple pipeline                              |           |           |            |
| Underground pipeline                  |                                                |           |           |            |
| Pond                                  | Fountain                                       |           |           |            |
| Well, uncovered                       | Well, covered                                  |           |           |            |
| Water treatment plant                 | Public swimming pool                           |           |           |            |
| Reservoir                             | Water tower                                    |           |           |            |
| Power plant with<br>switching station | High tension transmission<br>line with pylon   |           |           |            |

The Swiss National Maps

are the official topographic maps of Switzerland published at the scales 1: 25 000, 1: 50 000, 1: 100 000, 1: 200 000, 1: 500 000 and 1: 1 million. Each of the different map scales covers the entire area of Switzerland. There are composite sheets available at the scales 1: 25 000, 1: 50 000 and 1: 100 000 of regions that are of particular interest to tourism or that form a geographic entity. All maps can be obtained folded or unfolded.

Conventional signs

The symbols of the topographic maps at the scales 1: 25 000, 1: 50 000 and 1: 100 000 are explained in this brochure. The symbols appearing on maps at other scales are explained on those maps. Other symbols may appear on older maps, however, these discrepancies will be eliminated in the course of the regular revision and update cycle. For maps at the scale 1: 25 000 bordering with France and Germany, the symbols and conventional signs are those used by the respective countries.

Map lettering

The type style depends on the represented feature. Names of municipalities are set upright, names of suburbs or hamlets in italics. Names of valleys and mountains are set in medium, regional names in light weight type. The importance of an object is indicated by the size and type of lettering. For towns and cities, the size depends on the number of inhabitants.

| Settlement              | Population      | 1:25 000       | 1:50 000   | 1:100 000   |
|-------------------------|-----------------|----------------|------------|-------------|
| Town                    | over 50 000     | BERN           | GENÈVE     | ZÜRICH      |
| Town                    | 10 000 – 50 000 | LUGANO         | CHUR       | SION        |
| Municipality            | 2000 – 10 000   | Sumvitg        | Biasca     | Buochs      |
| Municipality            | less than 2000  | Cressier (NE)  | Saïoĝn     | Corippo     |
| Suburb                  | over 2000       | Cassarate      | Bruggen    | Le Sentier  |
| Suburb                  | 100 – 2000      | Champfèr       | Carasso    | Mürren      |
| Hamlet, group of houses | 50 – 100        | Le Plan        | Clavaniev  | Nante       |
| Single house, hut       |                 | Trifthütte SAC | La Râpette | A. Naucuola |

Examples of other topographic names

|                  |                        |                         |                   |                    |
|------------------|------------------------|-------------------------|-------------------|--------------------|
| Regions, Forests | Clos du Doubs          | G i b e l e g g w a l d |                   |                    |
| Valleys          | Surselva               | Val Malvaglia           | Chummertälli      |                    |
| Mountains        | Jungfrau               | Rosablanche             | Poncione di Braga |                    |
| Passes           | Passo del San Gottardo | Col de la Croix         | Fuorcla Surlej    |                    |
| Rivers           | LE RHÔNE               | Limmat                  | Verxasca          | Ooa Chamuera       |
| Lakes            | LAGO MAGGIORE          | Lac de Morat            | Lej da Segl       |                    |
| Glaciers         | Aletschgletscher       | Vadret Pers             | Gh. dei Cavagnoli | Gl. de Darbonneire |

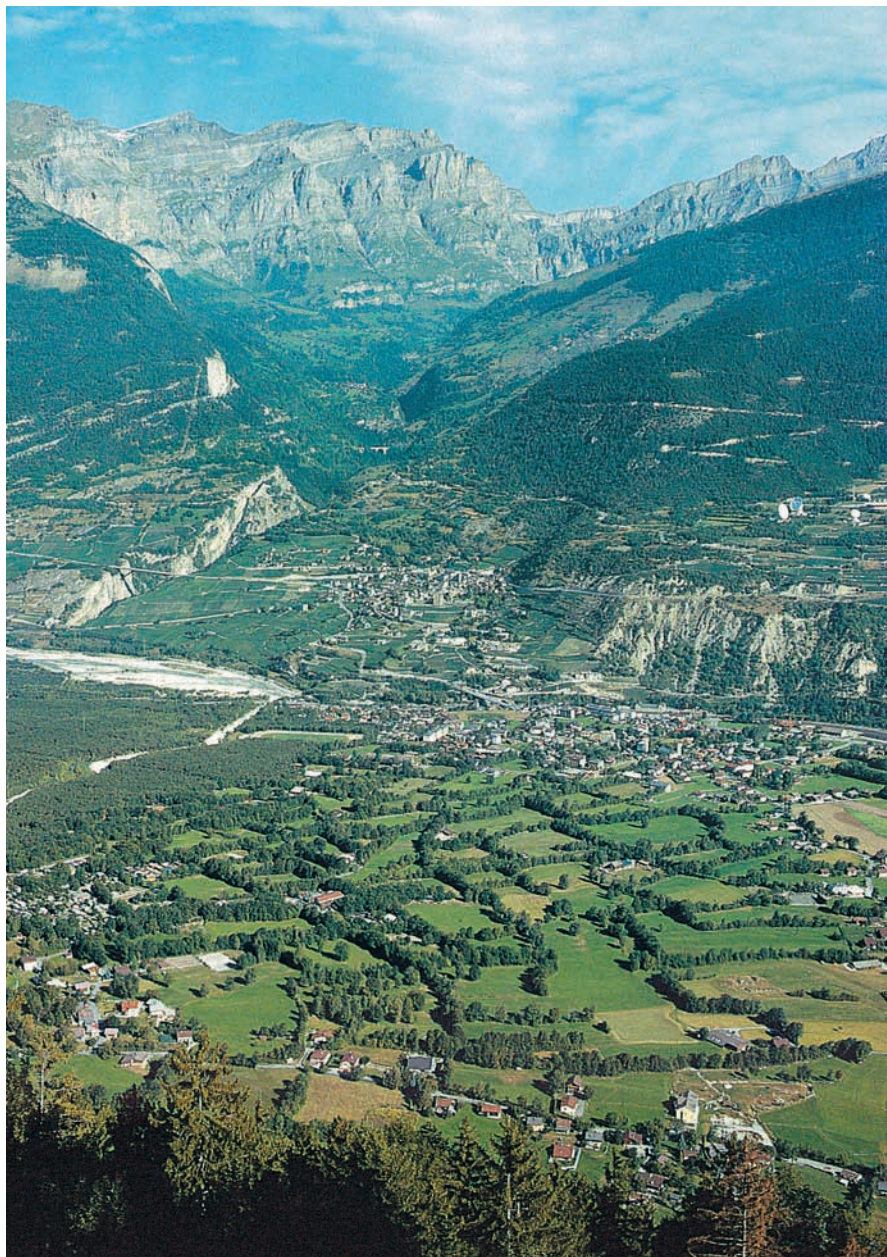
Abbreviations

The individual symbols are designed to indicate the represented feature clearly.

In addition, some important features are labelled, often with an abbreviation due to lack of space.

| deutsch                              | français                                       | italiano                                              | rumantsch                            |
|--------------------------------------|------------------------------------------------|-------------------------------------------------------|--------------------------------------|
| <i>A.</i> Alp                        | <i>A.</i> Alpe                                 | <i>A.</i> Alpe                                        | <i>A.</i> Alp                        |
| <i>ARA</i> Abwasserreinigungs-anlage | <i>Aig.</i> Aiguille, -s                       | <i>Biv.</i> Bivacco                                   | <i>Bl. err.</i> Bloc erratic         |
| <i>Äuss.</i> Äussere, -er            | <i>Anc.</i> Ancien, -ne                        | <i>BL. err.</i> Blocco erratico                       | <i>CAS</i> Club Alpin Svizzer        |
| <i>B.</i> Bach                       | <i>B.</i> Bois                                 | <i>Btta</i> Bocchetta                                 | <i>Cna</i> Camona                    |
| <i>Bhf.</i> Bahnhof                  | <i>BL. err.</i> Bloc erratique                 | <i>Cap.</i> Capanna                                   | <i>Cum.</i> Cumün, Cumegn            |
| <i>Br.</i> Brücke                    | <i>C.</i> Col                                  | <i>CAS</i> Club Alpino Svizzero                       | <i>F.</i> Fuorcla, Furcla            |
| <i>Err. BL.</i> Erratischer Block    | <i>Cab.</i> Cabane                             | <i>Cast.</i> Castello                                 | <i>Fda</i> Fermeda, Fermada          |
| <i>EW</i> Elektrizitätswerk          | <i>CAS</i> Club Alpin Suisse                   | <i>Cna</i> Cascina, Cassina                           | <i>Funt.</i> Funtauna                |
| <i>F.</i> Firm                       | <i>Ch.</i> Chemin                              | <i>Cne</i> Comune                                     | <i>Lav.</i> Lavinar, Lavinier        |
| <i>Gde.</i> Gemeinde                 | <i>Chap.</i> Chapelle                          | <i>Dog.</i> Dogana                                    | <i>Mgna</i> Muntogna, Muntagna       |
| <i>GL.</i> Gletscher                 | <i>Chât.</i> Château                           | <i>F.</i> Fiume                                       | <i>OE</i> Ouvra electrica            |
| <i>Gr.</i> Graben                    | <i>Cil.</i> Citerne                            | <i>Fore.</i> Forcola, Forcella, Forcellina, Forchetta | <i>Osp.</i> Ospidel, Ospedel         |
| <i>Gr.</i> Gross, -e, -er            | <i>Clin.</i> Clinique                          | <i>Fta</i> Fermata                                    | <i>P.</i> Piz, Pez                   |
| <i>H.</i> Hütte                      | <i>Cne</i> Commune                             | <i>Gh.</i> Ghiacciaio                                 | <i>Rna</i> Ruina                     |
| <i>Hint.</i> Hinter, -e, -er         | <i>Et.</i> Etang                               | <i>IDA</i> Impianto di depurazione delle acque        | <i>S.</i> San, Son, Sogn, Sontg      |
| <i>Hst.</i> Haltestelle              | <i>F.</i> Forêt                                | <i>Imp.</i> Impianto                                  | <i>Sar.</i> Sarinera                 |
| <i>Inn.</i> Inner, -e, -er           | <i>Font.</i> Fontaine                          | <i>Inf.</i> Inferiore                                 | <i>Ser.</i> Serenera                 |
| <i>J.</i> Joch                       | <i>Gd, Gde</i> Grand, -e                       | <i>Lto</i> Laghetto                                   | <i>Stn</i> Staziun                   |
| <i>K.</i> Kopf                       | <i>Gl.</i> Glacier                             | <i>M.</i> Monte, Monti                                | <i>Vad.</i> Vadret                   |
| <i>Kap.</i> Kapelle                  | <i>H.</i> Halte                                | <i>Mgna</i> Montagna                                  | <i>Vscha</i> Vischnanca, Vschinaunca |
| <i>KL.</i> Klein, -e, -er            | <i>Höp.</i> Hôpital                            | <i>Mno</i> Molino                                     |                                      |
| <i>Ktr.</i> Kloster                  | <i>M.</i> Mont                                 | <i>OE</i> Officina elettrica                          |                                      |
| <i>L.</i> Lücke                      | <i>Mét.</i> Métairie                           | <i>Osp.</i> Ospedale                                  |                                      |
| <i>Mittl.</i> Mittler, -e, er        | <i>Mgne</i> Montagne                           | <i>Oss.</i> Osservatorio                              |                                      |
| <i>Ob.</i> Ober, -e, -er             | <i>Mlin</i> Moulin                             | <i>P.</i> Pizzo                                       |                                      |
| <i>P.</i> Pass                       | <i>Pass.</i> Passerelle                        | <i>Pne</i> Poncione                                   |                                      |
| <i>Präh.</i> Prähistorisch, -e, -er  | <i>Pt, Pte</i> Petit, -e                       | <i>Pso</i> Passo                                      |                                      |
| <i>Rne.</i> Ruine                    | <i>Pte de ...</i> Pointe de ...                | <i>R.</i> Ri, Riale, Rio                              |                                      |
| <i>Röm.</i> Römisch, -e, -er         | <i>R.</i> Ruisseau                             | <i>Rif.</i> Rifugio                                   |                                      |
| <i>S.</i> See                        | <i>Ref.</i> Refuge                             | <i>SAT</i> Società Alpinistica Ticinese               |                                      |
| <i>SAC</i> Schweizer Alpen Club      | <i>Rne</i> Ruine                               | <i>Sta</i> Santa                                      |                                      |
| <i>Schl.</i> Schloss                 | <i>Sce</i> Source                              | <i>Stne</i> Stazione                                  |                                      |
| <i>Sp.</i> Spitz, -e                 | <i>St-</i> Saint-                              | <i>T.</i> Torrente                                    |                                      |
| <i>St.</i> Sankt                     | <i>Ste-</i> Sainte-                            | <i>UTOE</i> Unione Ticinese Operai Escursionisti      |                                      |
| <i>St.</i> Stock                     | <i>Stn</i> Station                             | <i>V.</i> Val, Valle                                  |                                      |
| <i>Stn.</i> Station                  | <i>STEP</i> Station d'épuration des eaux usées | <i>Ved.</i> Vedretta                                  |                                      |
| <i>Unt.</i> Unter, -e, -er           | <i>T.</i> Torrent                              | <i>Vne</i> Vallone                                    |                                      |
| <i>Uss.</i> Usser, -e, -i            | <i>UE</i> Usine électrique                     |                                                       |                                      |
| <i>Vord.</i> Vorder, -e, -er         |                                                |                                                       |                                      |
| <i>W.</i> Wald                       |                                                |                                                       |                                      |

**Terrestrial photograph**



Digital orthophoto "SWISSIMAGE"



National map 1:25 000



National map 1:50 000



National map 1:100 000



**Map revision**

In a very meticulous and time-consuming process the Swiss National Maps are revised and updated in a 6-year cycle. The date appearing on the title of the map indicates the year of publication, whereas the status of the map content is shown on the inside of the map.

Since the landscape is constantly subject to transformations and modifications, there may be differences between the map and reality.

We are happy to accept any reports of errors or ambiguous information.

**Generalization**

The natural and man-made features of the earth's surface are represented at a very small scale on maps. The smaller the scale, the less room there is to represent reality. It is therefore necessary to revise and generalize the map content by emphasizing important features, simplifying complicated situations, and omitting less important ones.

**Scale**

The map scale indicates the linear reduction ratio of the map content.

- 1:25 000    4 cm on the map represent  
                  1 km on the earth's surface
- 1:50 000    2 cm on the map represent  
                  1 km on the earth's surface
- 1:100 000   1 cm on the map represents  
                  1 km on the earth's surface

A graphic scale is shown in the bottom margin of the map.

**National coordinates**

A Cartesian kilometric grid is printed on the topographic maps 1:25 000 and 1:50 000, and a 10 km grid is on the map 1:100 000.

The fundamental point of the projection has the values y = 600 km (east) and x = 200 km (north) assigned to it. Any point in Switzerland can therefore be defined with meter-accuracy by two sixdigit numbers, whereby the larger value is named first.

Example: Lion Monument in Lucerne:  
666 270 / 212 290

The coordinates can be easily read from the map with a special coordinate ruler (for ex. "rapex"®) or with a normal mm ruler. Estimations to the nearest 100 m are often sufficient for ordinary map use.

## Geodetic datum

The reference system for surveying and cartography in Switzerland is defined by the geodetic datum "CH1903" based on Bessel's ellipsoid from 1841 at the fundamental point in Bern (old observatory). The Swiss map projection is a conformal, oblique cylinder projection with its point of origin ( $y = 600 \text{ km}$  /  $x = 200 \text{ km}$ ) at the fundamental point in Bern. The point of origin for height measurements is the "Repère Pierre du Niton" with a height of 373.600 m above the mean sea level in Marseilles. For navigation (GPS) applications, the global geodetic datum "WGS84" is used. It differs from "CH1903" in the y-axis by -50 to -110 m, in the x-axis by -130 to -160 m and in height by 45 to 53 m, depending on the location in Switzerland. The transformation programs for coordinates ("CH1903" / "WGS84") are available at swisstopo.

## Convergence of meridians and declination

The variable value of the angle of westerly or easterly deviation of the magnetic needle (convergence of meridians plus magnetic declination) corresponds to the south-north line (grid north) of the coordinate grid. The value refers to the center of the map sheet and for the given year, decreasing annually by a specific value.

The locally variable value of the angle between the geographic and the grid north (convergence of meridians) can reach up to 2° in Switzerland. In most cases the declination is currently negligible when using a compass. In zones of interference, however, larger deviations may occur. The relative information can be found in the bottom right-hand margin.

## Thematic maps

In cooperation with other organizations, the Federal Office of Topography publishes various thematic maps based on the official topographic maps. Examples: Road Map, Hiking Maps, Ski Tour Maps, Municipality Map, Map of Castles, Map of Museums, Map of Protected Cultural Assets, Aeronautical Chart ICAO, Glider Chart, Chart of Air Navigation Obstacles, Atlas of Switzerland etc.

## Aerial photographs

Each year aerial photographs are taken of one sixth of Switzerland. These black-and-white photos as well as the "SWISSIMAGE" color photos (since 1998) are also available to the public. There are about 350,000 aerial photographs (dating back to the 1920s) and

satellite images catalogued in our archives. Detailed information is available at the photo library of swisstopo.

## Multimedia products

National Maps at 1:25 000, 1:50 000, 1:100 000, 1:200 000 and 1:500 000 scales on DVD or CD-ROM. Roam through three-dimensional panoramas of Swiss topography and visually analyse statistical data about Switzerland.

## Map-reading aids

Note: the following two articles are available only in German and French.

A didactical media package *Vom Umgang mit Karten und Geodaten – Laure und Tom auf den Spuren des Röstigrabens* (swisstopo, 2006).

Booklets to be used in class and booklets with the answers, media kit (free if rented), special website [www.laureundtom.ch](http://www.laureundtom.ch) with additional information and work sheets.

The textbook *Karten lesen – Handbuch zu den Landeskarten* by Martin Gurtner (joint edition by swisstopo and the Swiss Alpine Club, 2nd edition 1998, ISBN 3-85902-137-0).

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