



Mapperhorn Terrain and Imagery

State of the Map Paris, Aug 28th, 2026

Oliver Wipfli

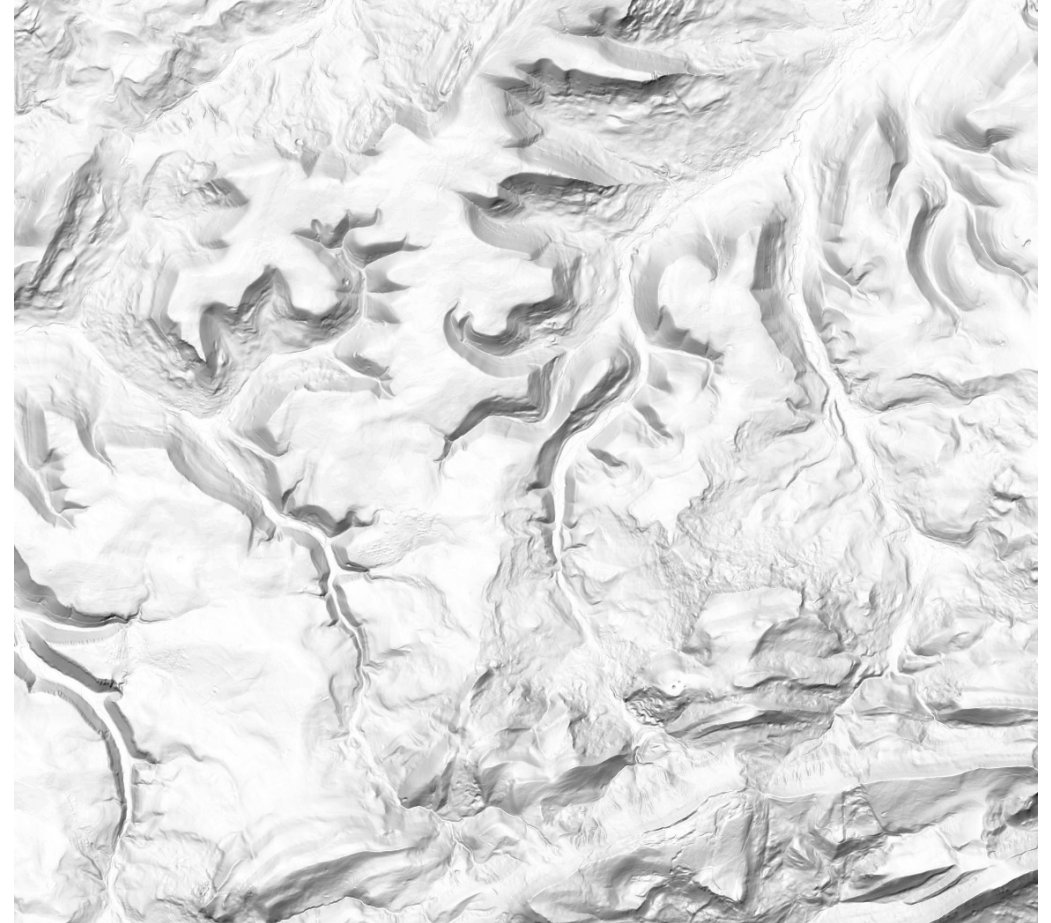
About Me

- Oliver Wipfli
- Based in Zürich, Switzerland
- Consultant in Maps and Location Technology
- Email: oliver.wipfli@leichterluft.ch
- GitHub: <https://github.com/wipfli>
- LinkedIn: [oliver-wipfli-562258210](#)



About Mapperhorn

- Aggregation of open terrain data
- Global low-resolution coverage, local high-resolution lidar
- For hillshading, contour lines, routing, u.s.w.
- Soon also aerial imagery



History

Brandon Liu
nlnet grant
Protomaps Basemap

nlnet grant
Mapterhorn Terrain

nlnet grant
Mapterhorn Imagery

2024

2025

2026

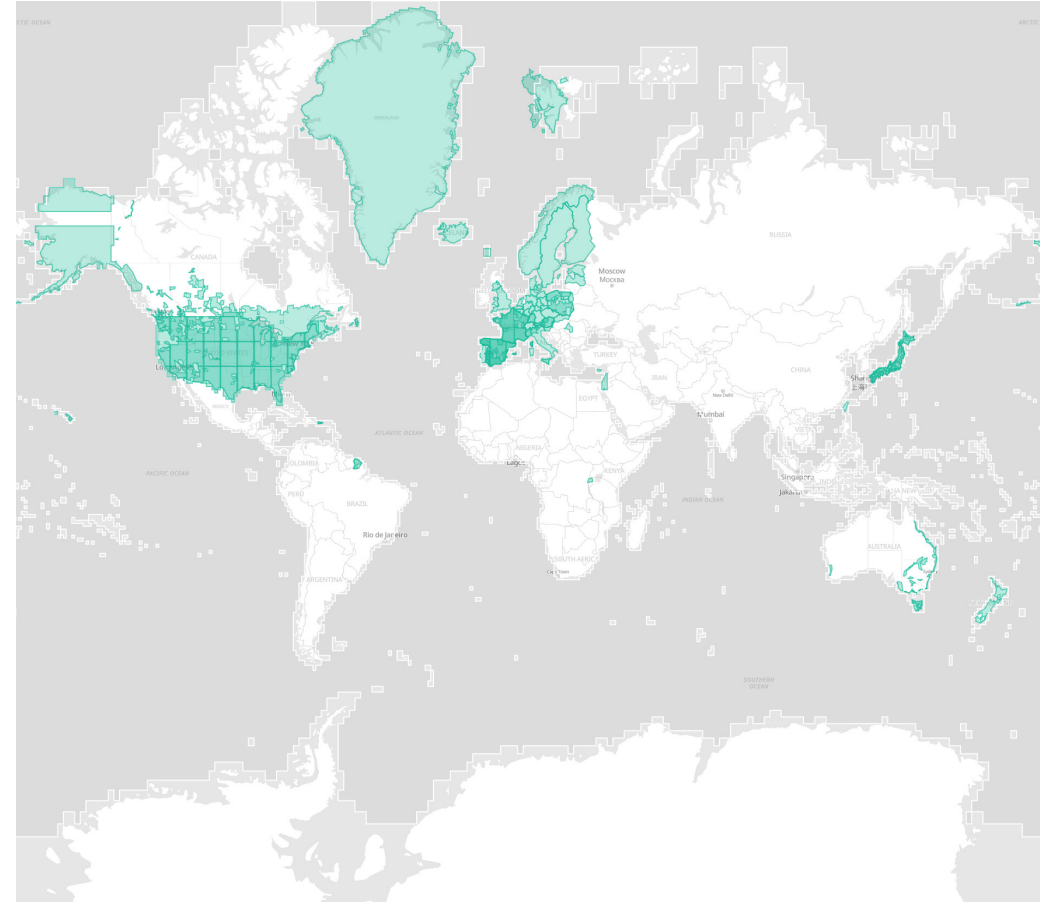
8.8.2025
first release
terrain

Outline

- Input
- Aggregation
- Output and Usage
- Funding and Governance
- Contributing
- Outlook

Input

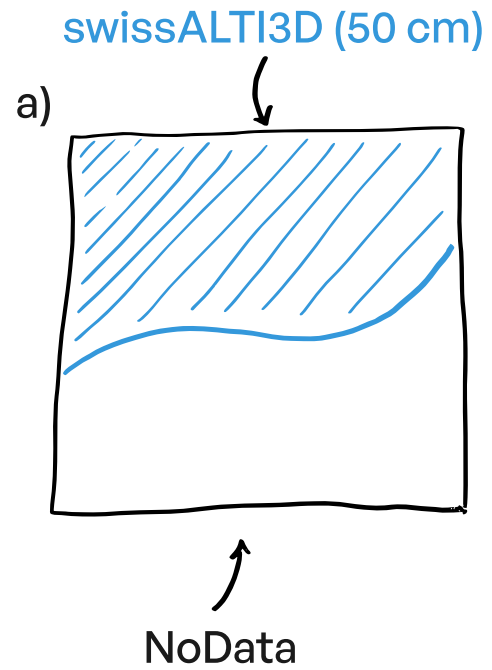
- Global: Copernicus 30 m resolution
- Local: High-resolution Lidar
- 70 data producers
- 18 TiB total input data, shared as tarballs
- mapperhorn.com/attribution
- License CC-BY "or less"



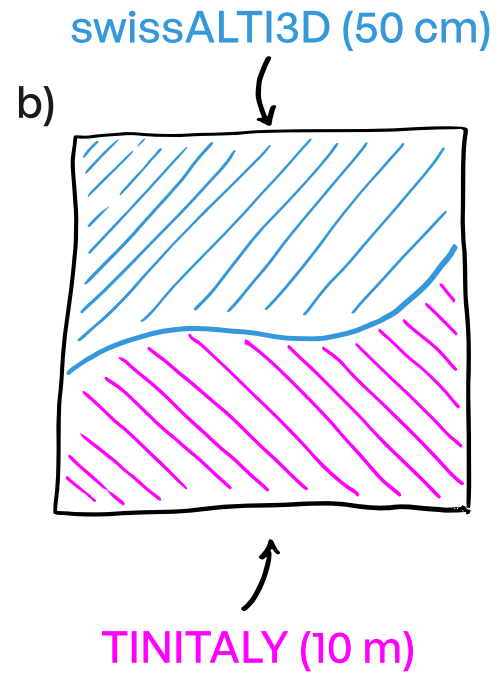
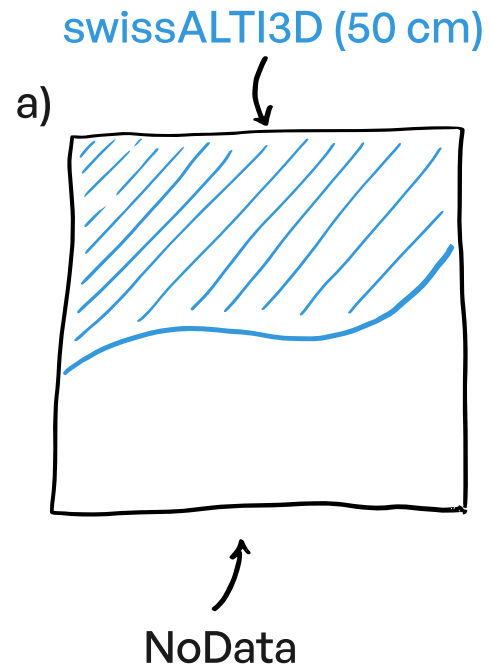
Input Normalization

- Download from geoportal
- Store LICENSE.pdf and metadata
- Set consistent projection and NoData value
- Store as GeoTiffs with unified compression and internal tiling
- Pack GeoTiffs, license, and metadata into a tarball
- Normalized tarballs available for download at mapterhorn.com/attribution

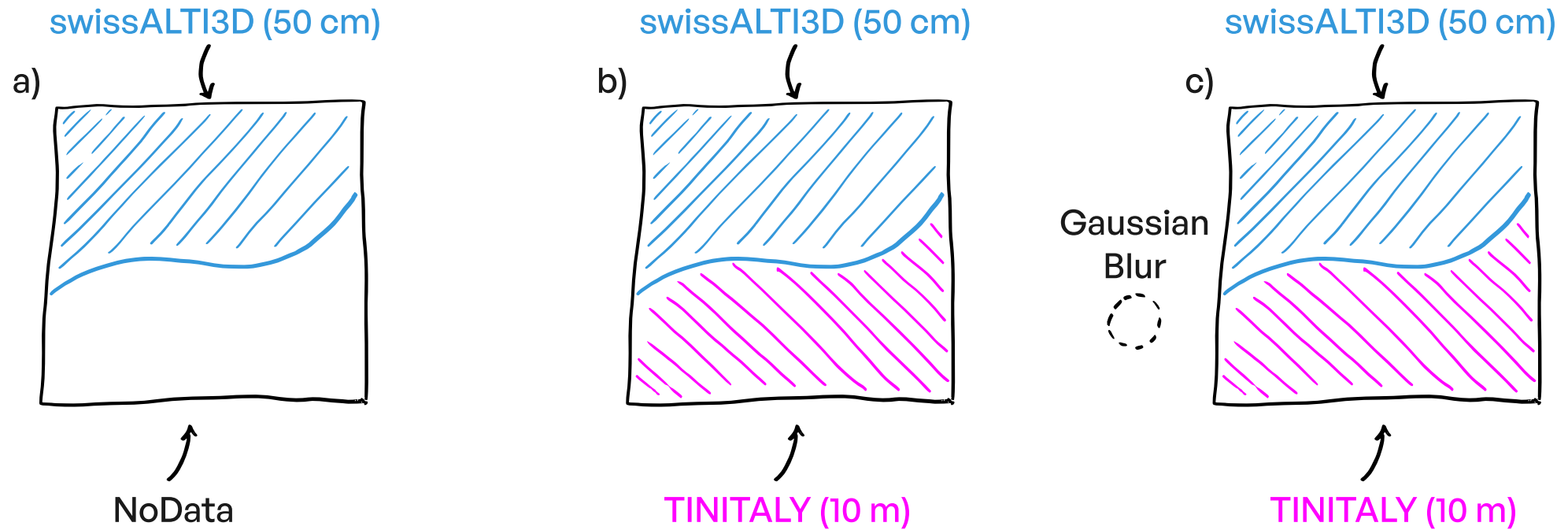
Aggregation

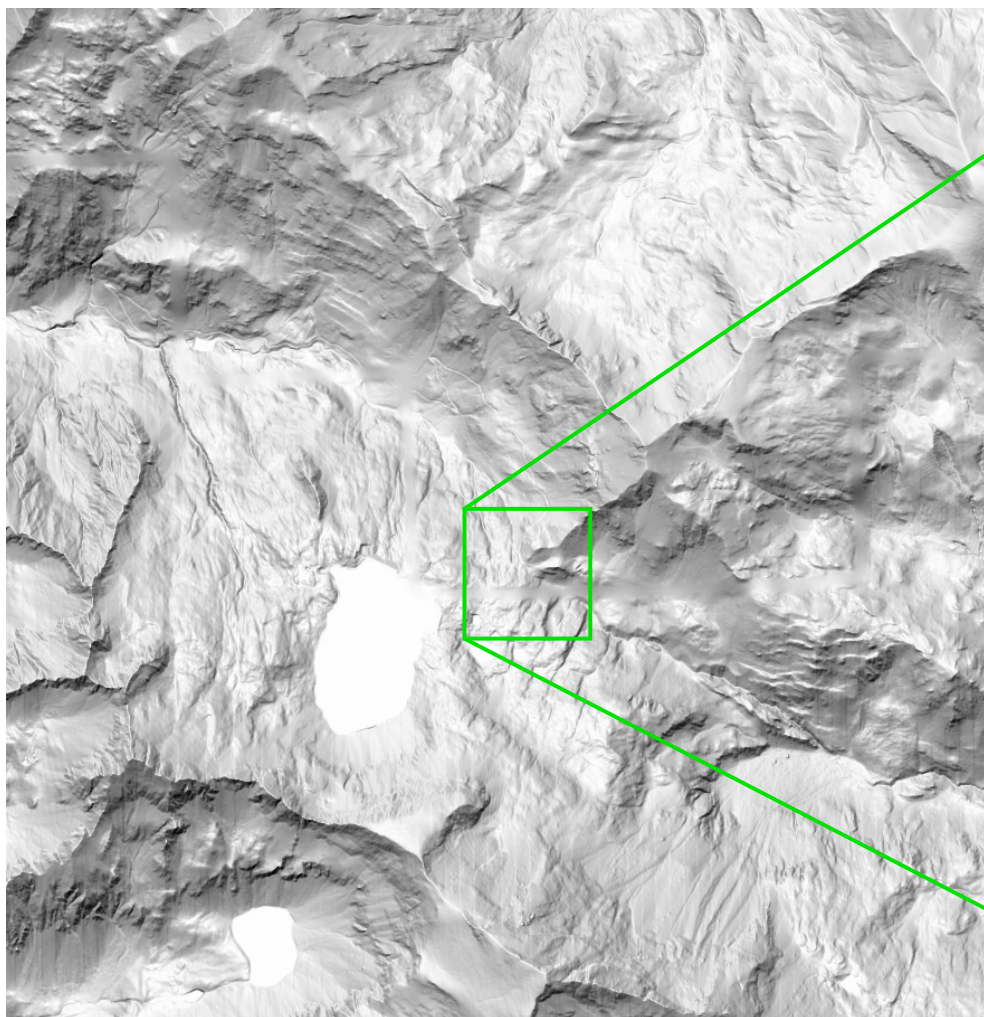


Aggregation

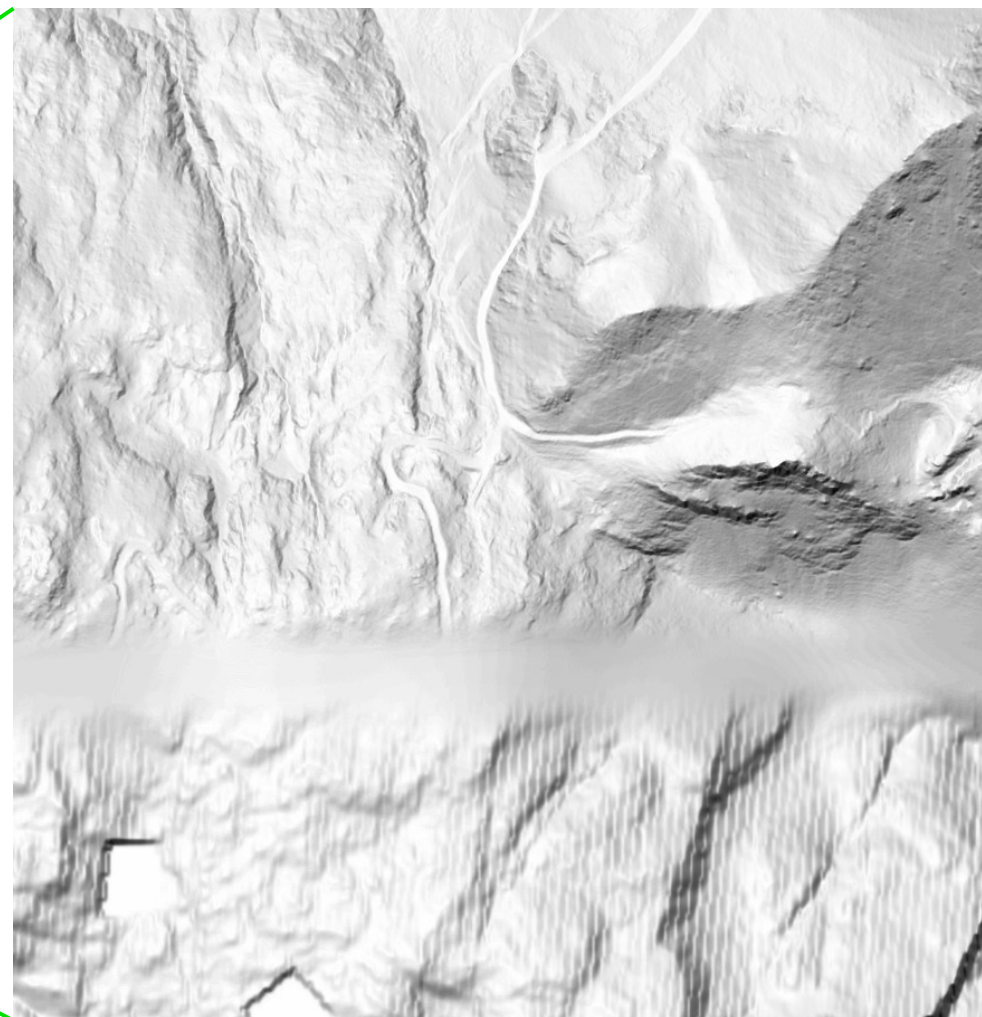


Aggregation





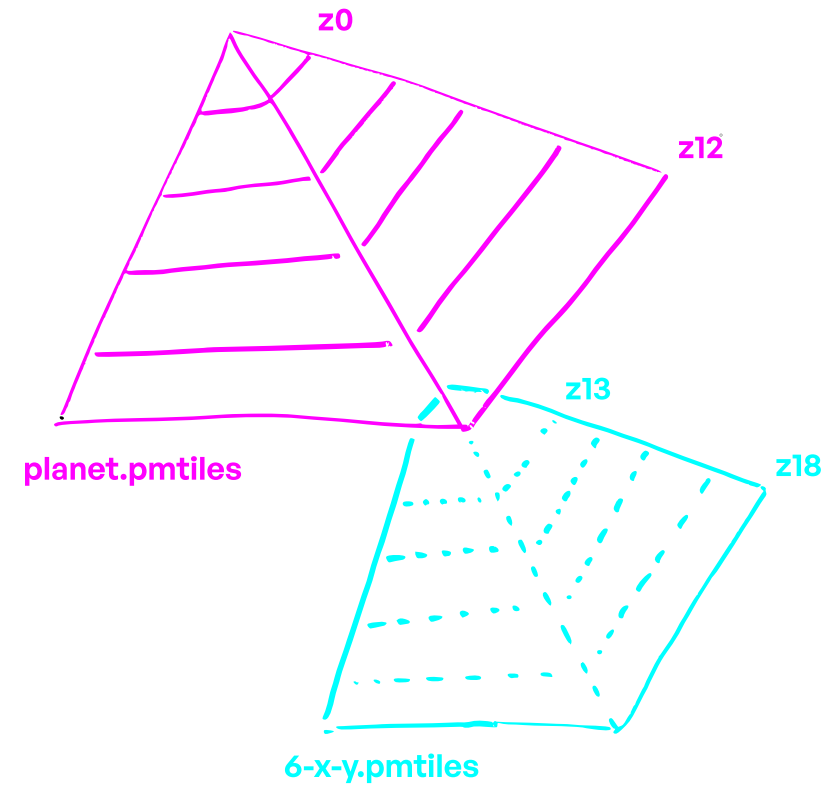
zoom 13.5



zoom 16.5

Output

- 11.8 TiB elevation tiles
- 458 PMTiles archives
- planet.pmtiles: global, zoom 0-12
- 6-x-y.pmtiles: local, zoom 13-var
- mapterhorn.com/data-access



Usage



[Viewer](#) [Data Access](#) [Coverage](#) [Attribution](#) [Examples](#)

Examples

Hillshade

Add hillshading to a map.



Contour

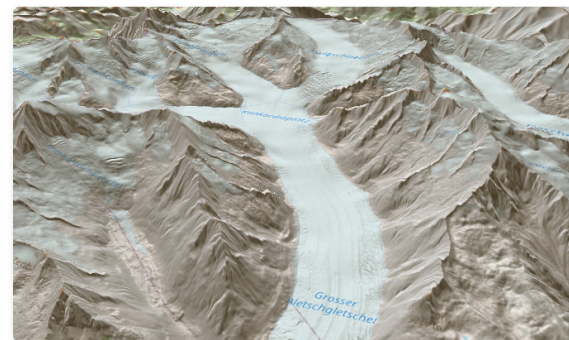
Add contour lines to a map.



mapperhorn.com/examples

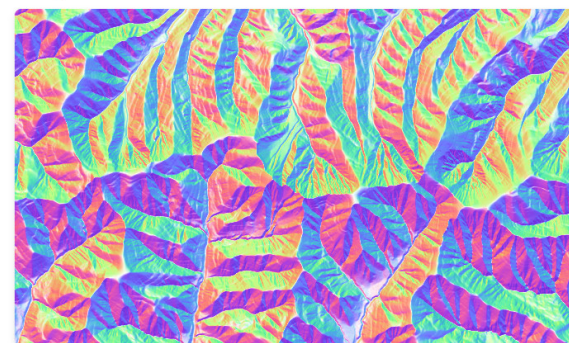
Terrain

Add 3D terrain and hillshading to an OpenStreetMap raster map.



PMTiles

Use Mapperhorn with PMTiles and addProtocol.



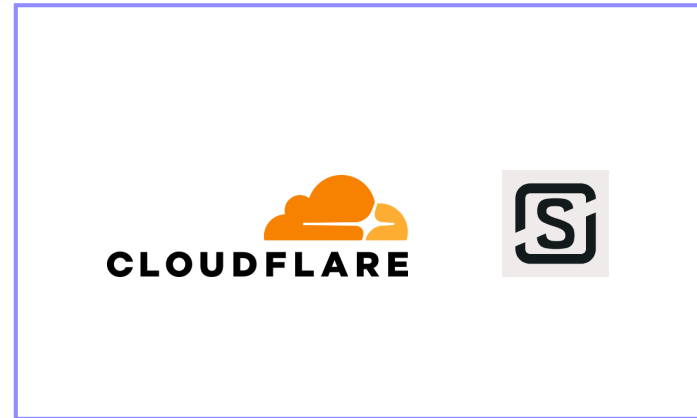
Users

- Media
 - ORF, SVT, zeit.de, FAZ, Seattle Times
- Routing
 - GraphHopper
- Outdoor
 - Komoot, outdooractive

Funding

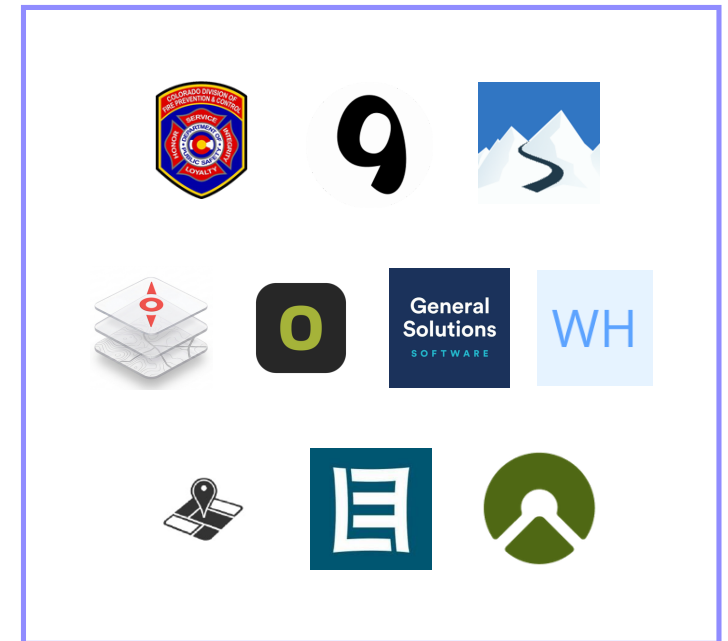


Research & Development



Web Hosting

opencollective.com/mapterhorn



Maintenance

Governance



Brandon Liu



Sascha Brawer



Oliver Wipfli

Full Access

- GitHub Organization
- Cloudflare Account
- Domain mapterhorn.com
- Financials at OpenCollective

Fiscal Host

OpenSourceCollective
501(c)(6) non-profit
440 N Barranca Ave #3939
Covina, CA 91723, USA

Contributing

- Share bug reports, suggest new or updated datasets
 - <https://github.com/mapterhorn/mapterhorn>
- Contribute financially
 - <https://opencollective.com/mapterhorn>

What's Next

- Aerial Imagery
- Same producers, "same" format, same pipeline
- Challenges:
 - 10x more data (100+ TiB)
 - Updates more frequently
- Maintenance, maintenance, maintenance



Thank You!

- oliver.wipfli@leichtersluft.ch
- Get a Mapperhorn sticker or key chain after the talk...