OpenMapTiles:

Vector tiles from OpenStreetMap

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SOTM 2018, Jul 28th, Milano, Italy

STATE OF THE MAP
Milan, Italy 2018

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KLOKAN TECHNOLOGIES

About OpenMapTiles

- Open-source tools for vector maps
- https://openmaptiles.org/
- https://github.com/openmaptiles
- Successor of OSM2VectorTiles
- Launched January 2017

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KLOKAN TECHNOLOGIES

Google: (14,10)
TMS: (14,21)
QuadTree: 03130
Zoom 5
Google: (15,10)
TMS: (15,21)
QuadTree: 03131
Zoom 5
Google: (16,10)
TMS: (16,21)
QuadTree: 12020
Zoom 5
Google: (17,10)
TMS: (17,21)
QuadTree: 12021
Zoom 5
Google: (18,10)
TMS: (18,21)
QuadTree: 12030
Zoom 5
Google: (14,11)
TMS: (14,20)
QuadTree: 03132
Zoom 5
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TMS: (16,20)
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Zoom 5
Google: (17,11)
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QuadTree: 12023
Zoom 5
Google: (18,11)
TMS: (18,20)
QuadTree: 12032
Zoom 5
Google: (14,12)
TMS: (14,19)
QuadTree: 03310
Zoom 5
Google: (15,12)
TMS: (15,19)
QuadTree: 03311
Zoom 5
Google: (16,12)
TMS: (16,19)
QuadTree: 12200
Zoom 5
Google: (17,12)
TMS: (17,19)
QuadTree: 12201
Zoom 5
Google: (18,12)
TMS: (18,19)
QuadTree: 12210
Zoom 5
United Kingdom
Isle of Man
Ireland
Edinburgh
Glasgow
Manchester
Liverpool
Dublin
London
North Sea
Denmark
Copenhagen
Hamburg
Netherlands
Germany
Belgium
Luxembourg
Frankfurt
Poland
Berlin
Warsaw
Prague
Czechia
Lithuania
Vilnius
Minsk
Belarus
Latvia
Riga
Moscow
Kiev
Ukraine
Kharkiv
Paris
France
Switzerland
Munich
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Hungary
Milan
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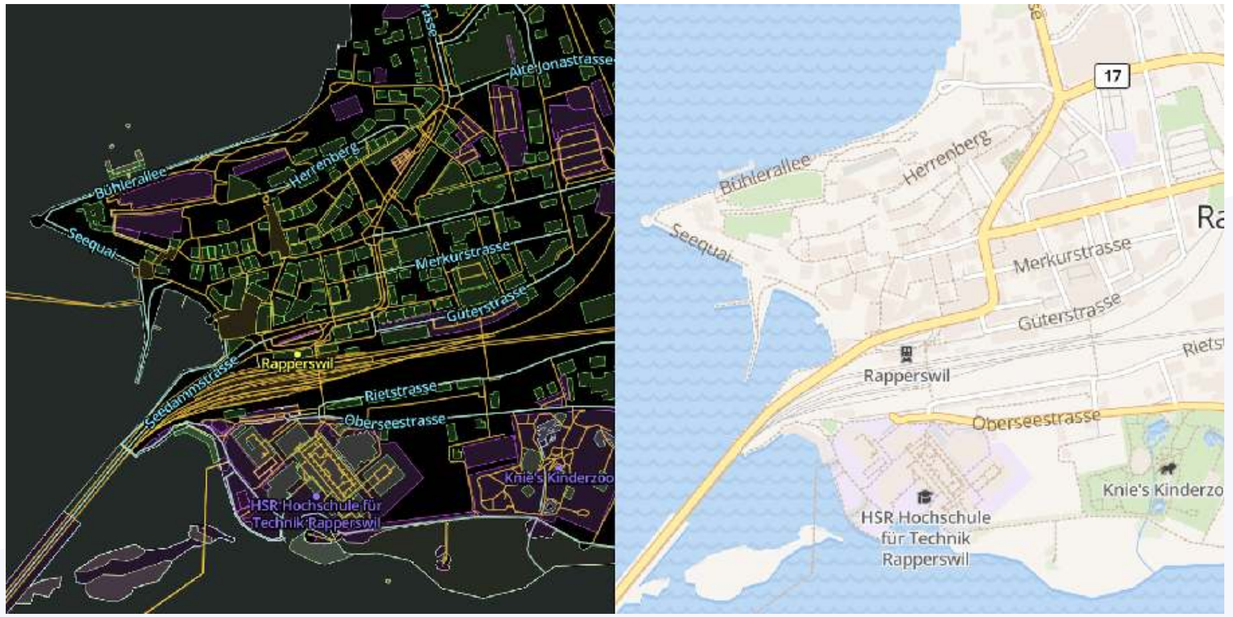
Andorra
Barcelona
Italy
Rome
Moldova
Chisinau
Odessa
Romania
Bucharest
Belgrade
Serbia
Bosnia and
Montenegro
Podgorica
Kosovo
Sofia
Bulgaria
Macedonia
(FYROM)
Tirana
Albania
Istanbul
Black Sea
Porto
Portugal
Lisbon
Madrid
Spain
Valencia
Gibraltar
Tyrrhenian Sea
Tunis
Greece
Athens
Izmir
Bursa
Ankara
Turkey
Antalya
Adana
Cyprus
Mediterranean Sea
Map data ©2017 GeoBasis-DE/BKG (©2009), Goo

Map tiles



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- Open Vector Tile Schema
  - Description of thematic data layers and attributes
  - Documented and extensible
- Tools for generating vector tiles
  - Creates MBTiles containing PBFs (MVT)
- Open Map Styles
  - Prepared styles for the tile schema
  - Easy to customize

DEMO

Using OpenMapTiles

www.openmaptiles.org

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World maps you can self-host

Petr Pridal

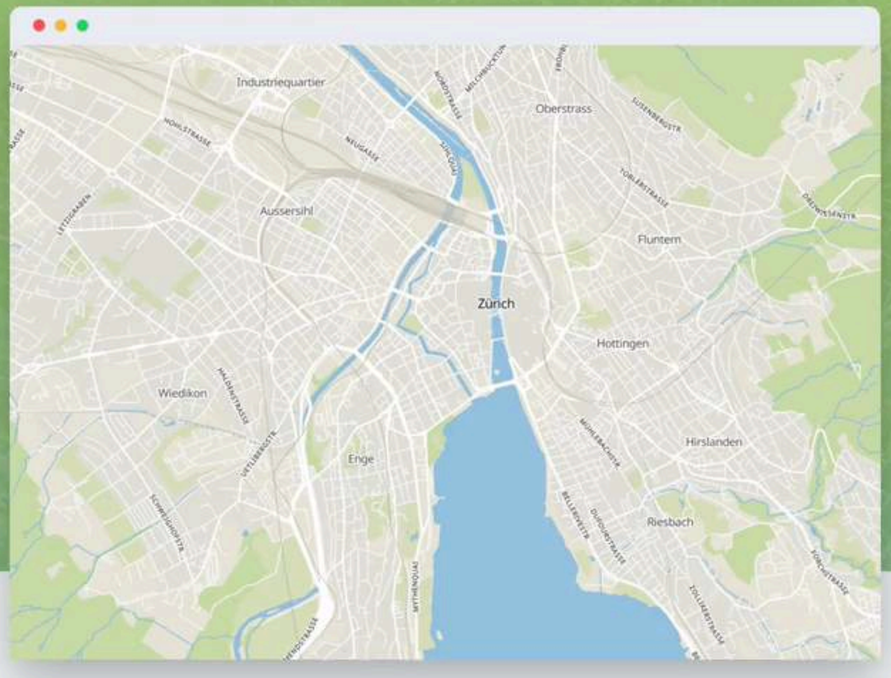
Secure https://openmaptiles.org

OpenMapTiles.org

About Docs Downloads Styles Schema .com

Open-source maps made for self-hosting

Free OpenStreetMap Vector Tiles



Trusted by

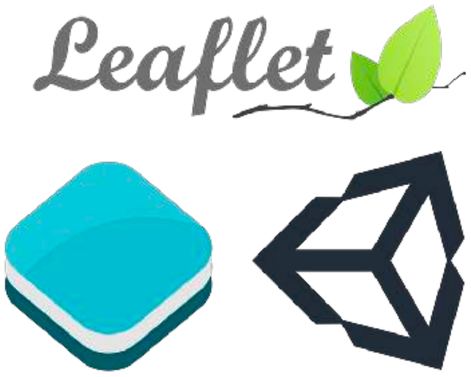
amazon BOSCH CARTO IBM planet. SIEMENS

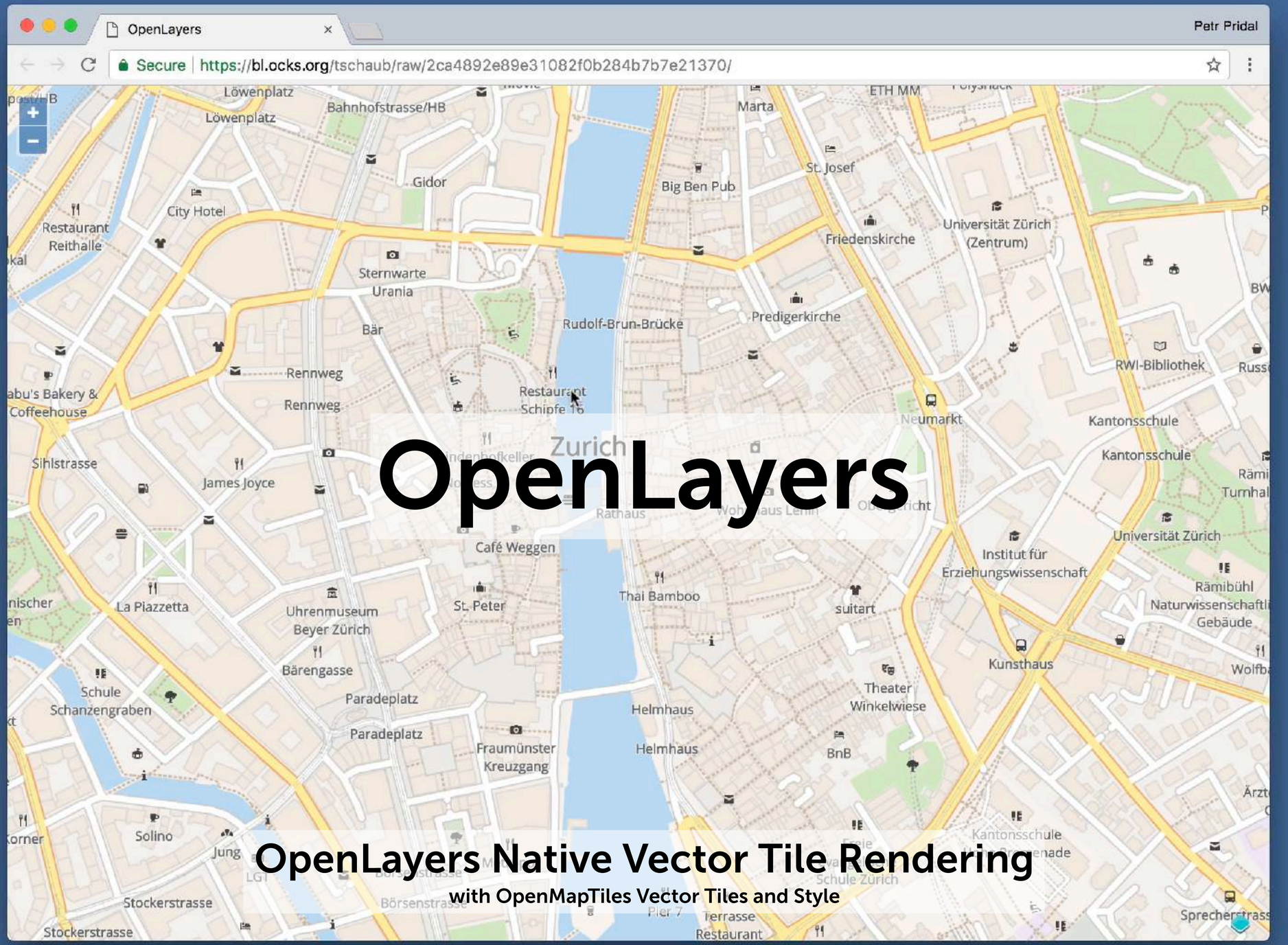
Choose your favourite server

- OpenMapTiles Server (vectors, rasters, WM(T)S, custom styles & data, …)
- TileServer GL Light (vectors only, pure JavaScript, node.js)
- TileServer GL (vectors + rasters using Mapbox GL Native, node.js/C++)
- TileServer PHP (vectors only)
- Tessera (powered by Tilelive)
- Postserve (on demand using ST_AsMVT)

Choose your favourite client API / SDK

- JavaScript API: OpenLayers, MB GL JS, Leaflet, WebGL Earth, …
- Mobile SDKs: MB GL for iOS / Android, Carto SDKs, … *OpenMapTiles app.*
- Desktop: QT Location, VectorTileRender .Net/C#, MapSui, …
- Games: Unity, …
- QGIS native plugin, ArcGIS compatibility




OpenLayers
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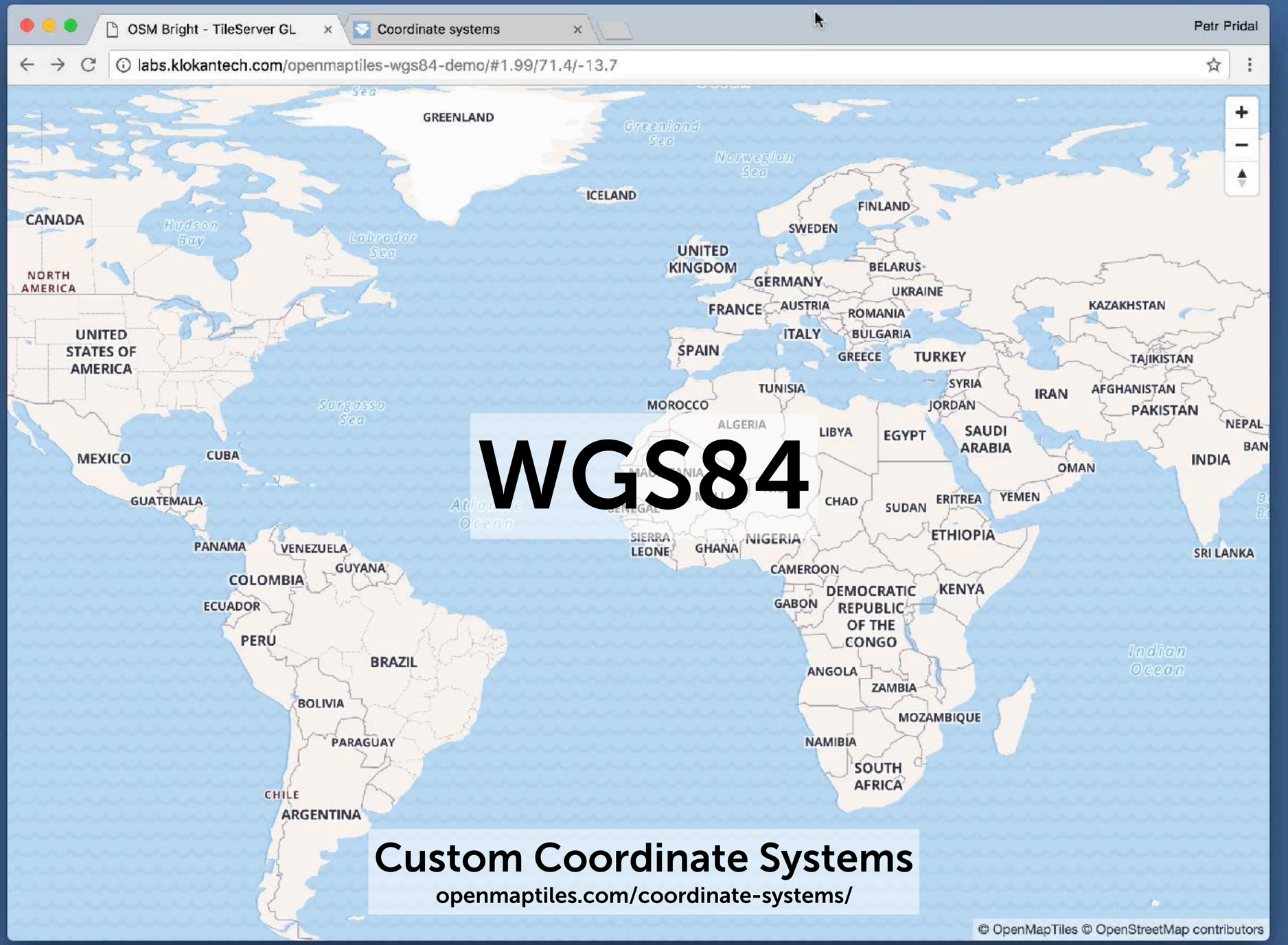
Secure | https://bl.ocks.org/tschaub/raw/2ca4892e89e31082f0b284b7b7e21370/
OpenLayers
OpenLayers Native Vector Tile Rendering
with OpenMapTiles Vector Tiles and Style


OSM Bright - TileServer GL
Coordinate systems
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labs.klokantech.com/openmaptiles-wgs84-demo/#1.99/71.4/-13.7
WGS84
Custom Coordinate Systems
openmaptiles.com/coordinate-systems/
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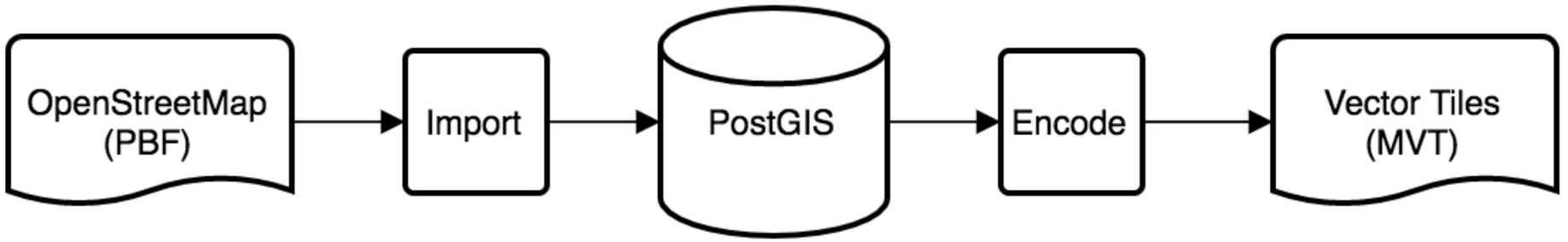
Modifying OpenMapTiles

- Anybody can generate OpenMapTiles
- Tutorials https://openmaptiles.org/docs/
- Requires Docker and Docker Compose
- Large areas can take some time
- Don’t have to do that (downloads available)

How to turn OSM into vector tiles

- Import OSM data into database (imposm3)
- Spatial database to integrate, preprocess, query (PostGIS)
- Encode a query for each tile as vector tile (Tilelive Mapnik)



DEMO

Modifying OpenMapTiles

www.openmaptiles.org

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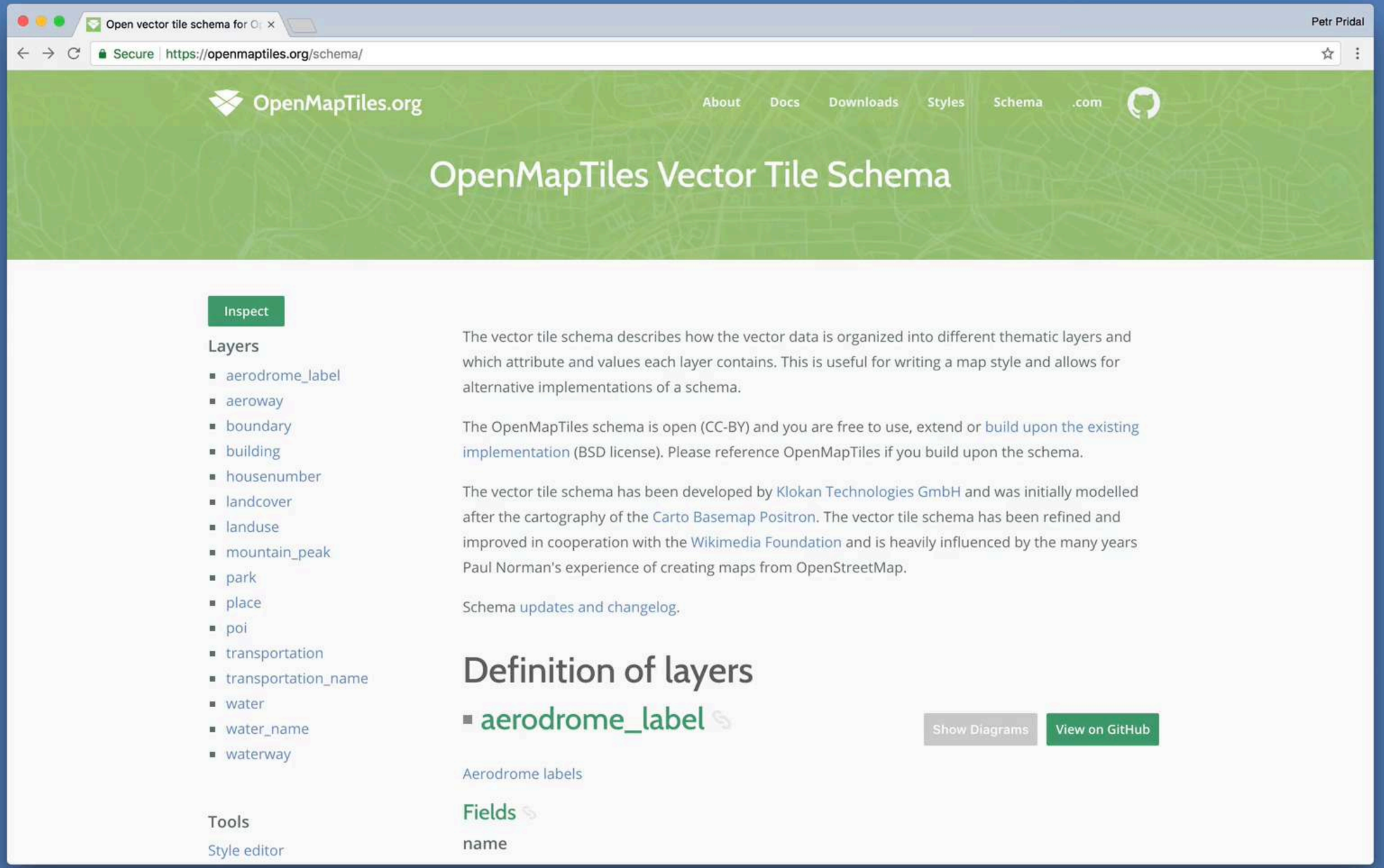
Open vector tile schema for O
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Secure | https://openmaptiles.org/schema/
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About
Docs
Downloads
Styles
Schema
.com
OpenMapTiles Vector Tile Schema
Inspect
Layers
aerodrome_label
aeroway
boundary
building
housenumber
landcover
landuse
mountain_peak
park
place
poi
transportation
transportation_name
water
water_name
waterway
Tools
Style editor
The vector tile schema describes how the vector data is organized into different thematic layers and which attribute and values each layer contains. This is useful for writing a map style and allows for alternative implementations of a schema.
The OpenMapTiles schema is open (CC-BY) and you are free to use, extend or build upon the existing implementation (BSD license). Please reference OpenMapTiles if you build upon the schema.
The vector tile schema has been developed by Klokan Technologies GmbH and was initially modelled after the cartography of the Carto Basemap Positron. The vector tile schema has been refined and improved in cooperation with the Wikimedia Foundation and is heavily influenced by the many years Paul Norman's experience of creating maps from OpenStreetMap.
Schema updates and changelog.
Definition of layers
aerodrome_label
Show Diagrams
View on GitHub
Aerodrome labels
Fields
name

Community

- Fork the project on GitHub (as others did)
- Use it for your subset of tags
- Make pull-request with new layers of fixes
- Talk to us, please!

OpenMapTiles.com

Extra map tiles and preprocessed geodata

Ready to use OpenStreetMap VT with weekly updates

Support + development + assistance with production deployment

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tilehosting.com
vector map
raster map
Close fullscreen preview
Streets
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Topo
Schattdorf
Unterschächen
Wissigstock 2887 m
Brunnistock 2952 m
Bälmeten 2414 m
3267 m
Piz Cazarauls 3063 m
Bifertenstock 3419 m
Engelberg
Erstfeld
Gross Spannort 3198 m
Silenen
Titlis 3238 m
Pfaffenhuet 3009 m
Amsteg
Gurtnellen
Chruzlistock 2709 m
Sumvitg
Sustenhorn 3503 m
Disentis/Mustér
Salbitschijen 2981 m
Sedrun
Curaglia
Piz Cazirauns 2935 m
Göschenen
Dammastock 3630 m
Andermatt
Piz Medel 3210 m
Hospental
Realp
Pizzo Centrale 2999 m
Piz Blas 3019 m
Campo (Blenio)
Pizzo Lucendro 2963 m
Language
Oberwald
Airolo
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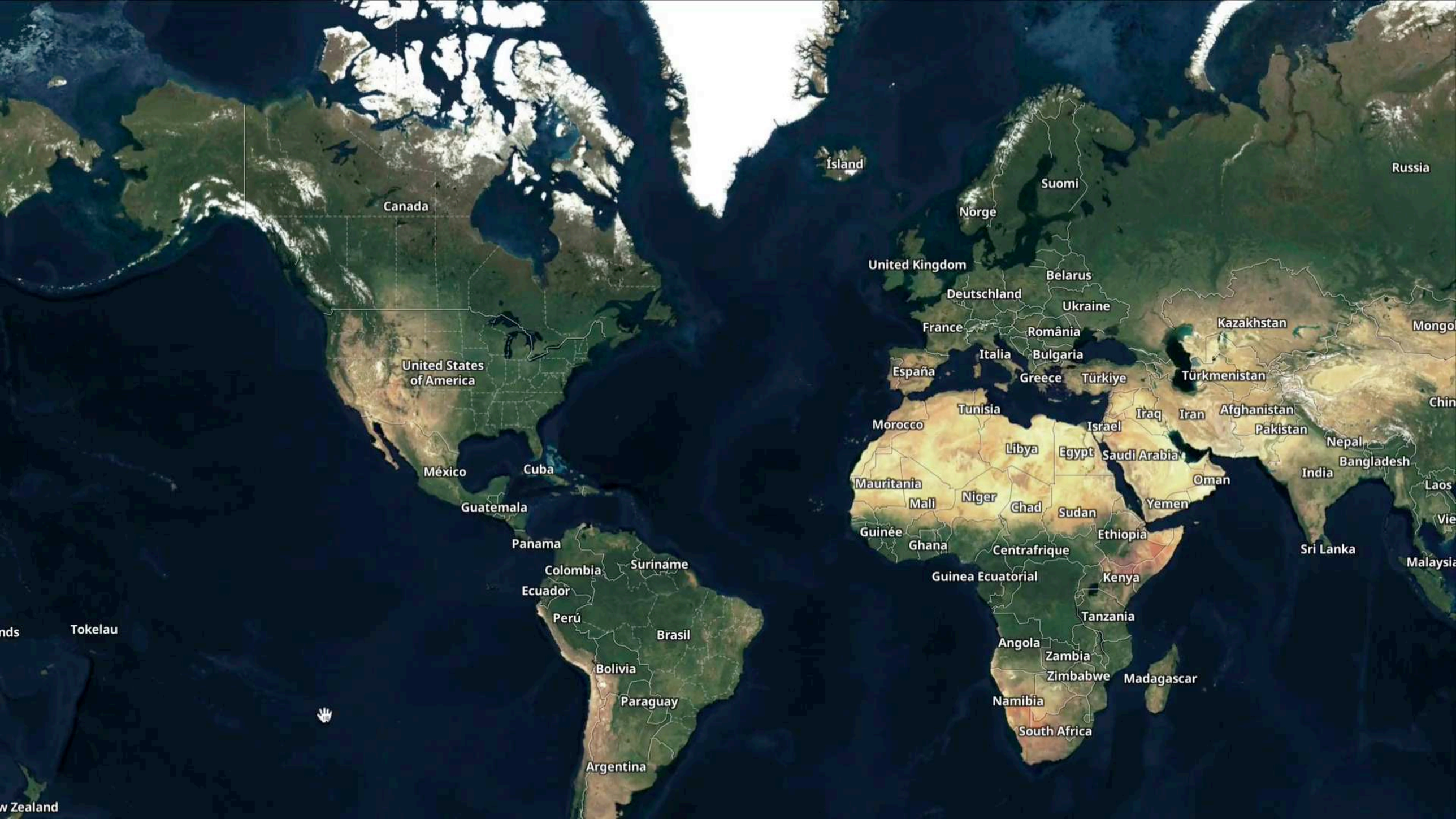
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Oman
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Mali
Chad
Sudan
Yemen
Guatemala
Guinée
Ethiopia
Panama
Ghana
Centrafrique
Sri Lanka
Malaysia
Suriname
Colombia
Guinea Ecuatorial
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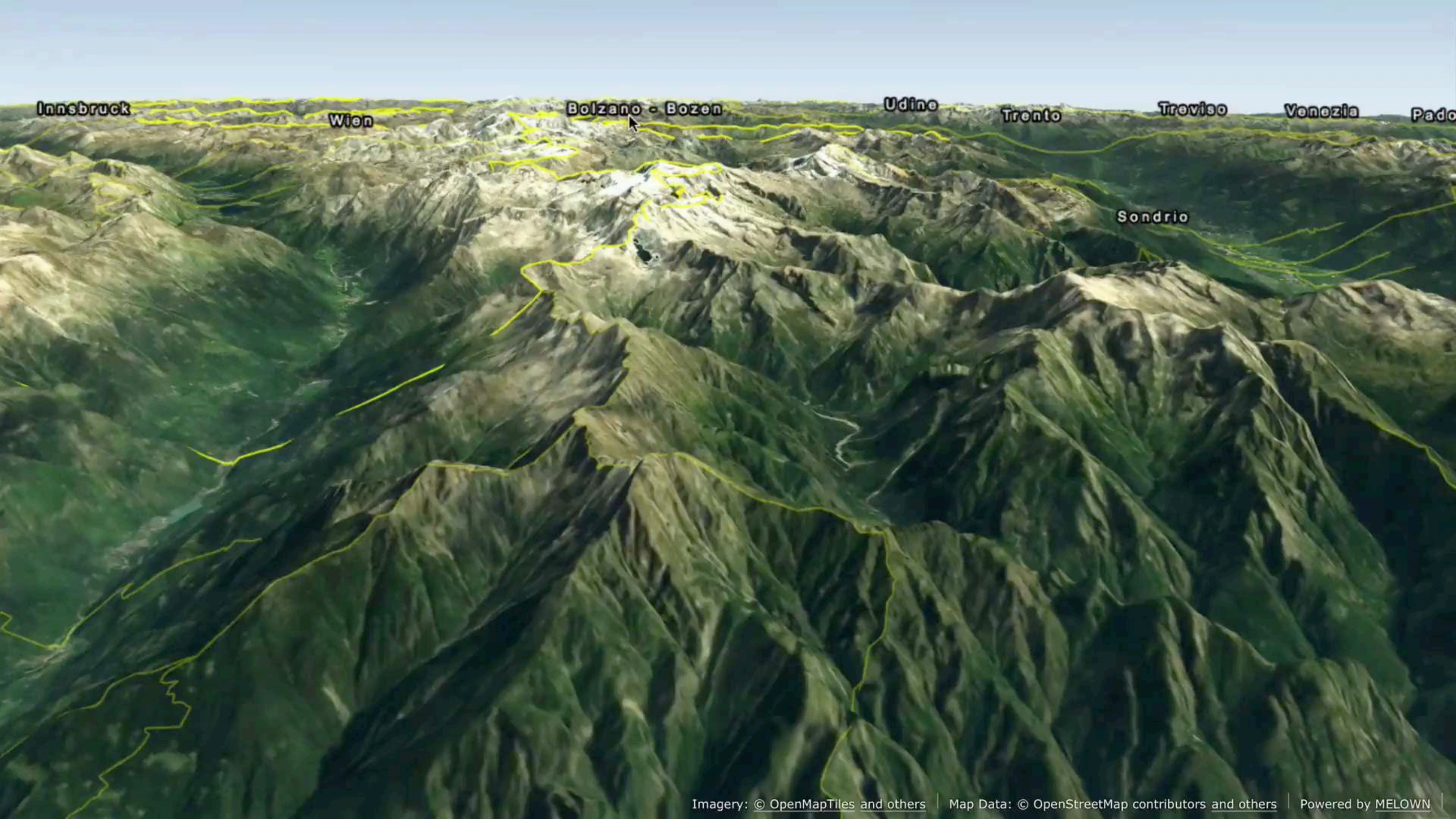
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Pado
Sondrio
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