



OpenLayers Feature Frenzy

Tolle Dinge, die OpenLayers
kann, von denen aber zu
wenige wissen

Marc Jansen

Andreas Hocevar

FOSSGIS 2021, Online-Event, 07.06.2021

Gliederung

- Über / Meta 🤝
- Feature Frenzy 😍
- Ausblick 👀

Über / Meta



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🐦 [@selectoid](https://twitter.com/selectoid)



- Geschäftsführer @terrestris & @mundialis
- Kernentwickler & PSC OpenLayers
- GeoExt, SHOGun, GeoStyler
- Sprecher & Trainer national & international
- OSGeo Foundation Charter Member

terrestris



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⌚ [@terrestris
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- terrestris.de
- OpenSource GIS aus Bonn
- Entwicklung, Projekte & Support/Schulung
- Beratung, Planung, Implementierung & Wartung

Teil des Teams werden?

mundialis & terrestris
suchen Verstärkung

👉 Kontaktiert uns 🚀

Andreas Hocevar

ahocevar geospatial



- OpenLayers Kernentwickler und im Steering Committee
- ol-mapbox-style Maintainer und Entwickler
- Professioneller OpenLayers Support

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🐦 [@ahoce](https://twitter.com/ahoce)

Was ist OpenLayers?

“

*A high-performance, feature-packed
library for all your mapping needs.*

– openlayers.org, 28. Mai 2021

- OpenSource (BSD)
- JavaScript
- OSGeo Projekt

Canvas Tiles

[layers](#) [openstreetmap](#) [canvas](#)

© OpenStreetMap contributors.

This website uses cookies to ensure you get the best experience on our site. The black grid tiles are generated on the client with an HTML5 canvas. The displayed tile coordinates are the XYZ tile coordinates.

Feature Frenzy



Immediate Rendering

- Zugriff auf den Render Context des Layers
- Zeichnen mit OpenLayers Geometrien und Styles
- Koordinatensystem der View

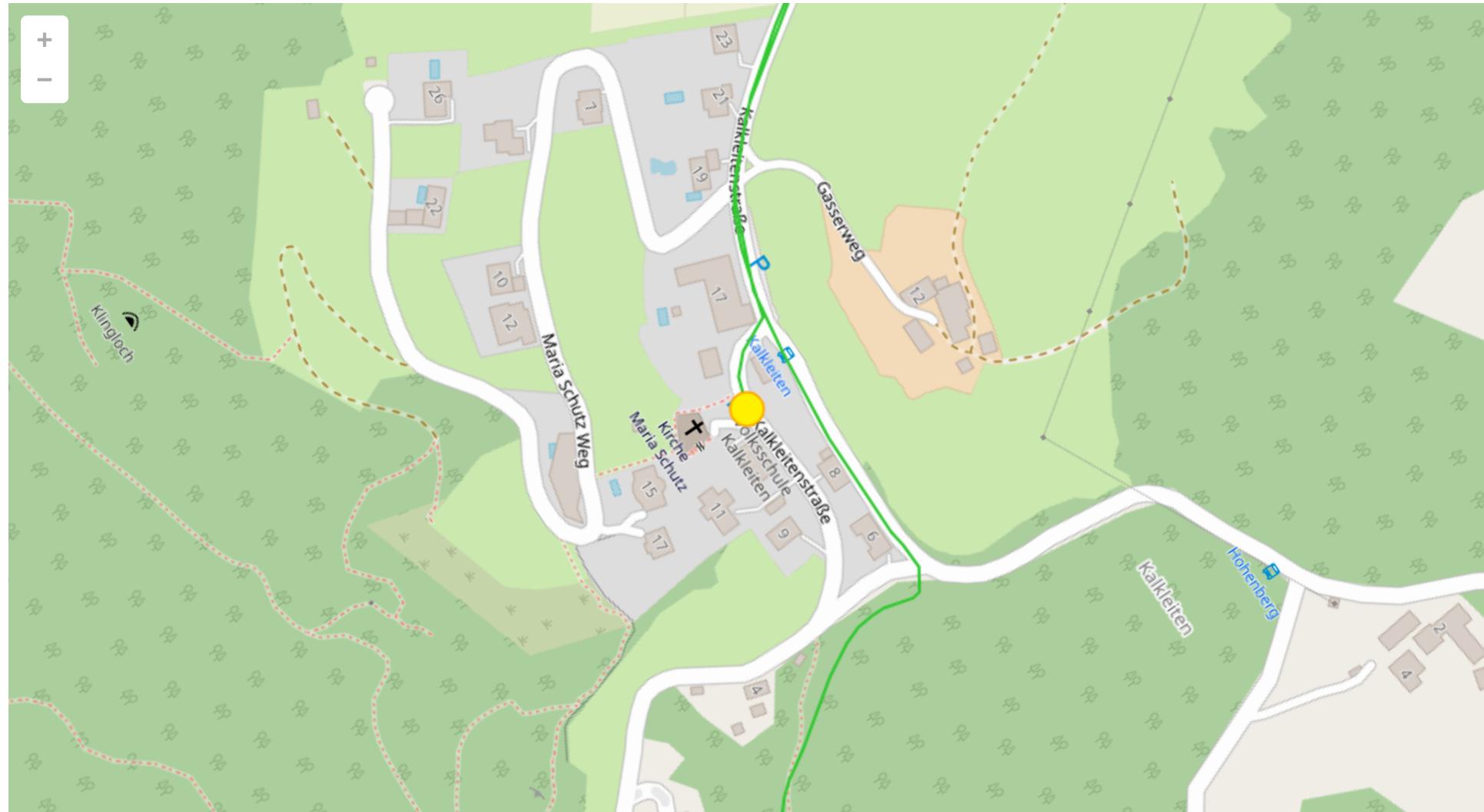
```
import toContext from 'ol/render';
layer.on('postrender', event => {
  const immediate = getVectorContext(event);
  immediate.setImageStyle(myCircleStyle);
  immediate.drawPoint(myPointGeometry);
});
```

Immediate Rendering

- Zugriff auf den Canvas Context des Layers
- Zeichnen mit dem Canvas 2D API
- Pixel-Koordinatensystem des Canvas

```
layer.on('postrender', event => {
  const context = event.context;
  const canvas = context.canvas;
  const center = [canvas.width / 2, canvas.height / 2];
  context.beginPath();
  context.moveTo(center[0] + 50, center[1] - 50);
  context.lineTo(center[0] - 50, center[1] - 50);
  context.lineTo(center[0] - 50, center[1] + 50);
  context.lineTo(center[0] + 50, center[1] + 50);
  context.closePath();
  context.fillStyle = 'rgba(50,170,50,0.5)';
  context.fill();
});
```

Immediate Rendering



Vector Tiles etc.

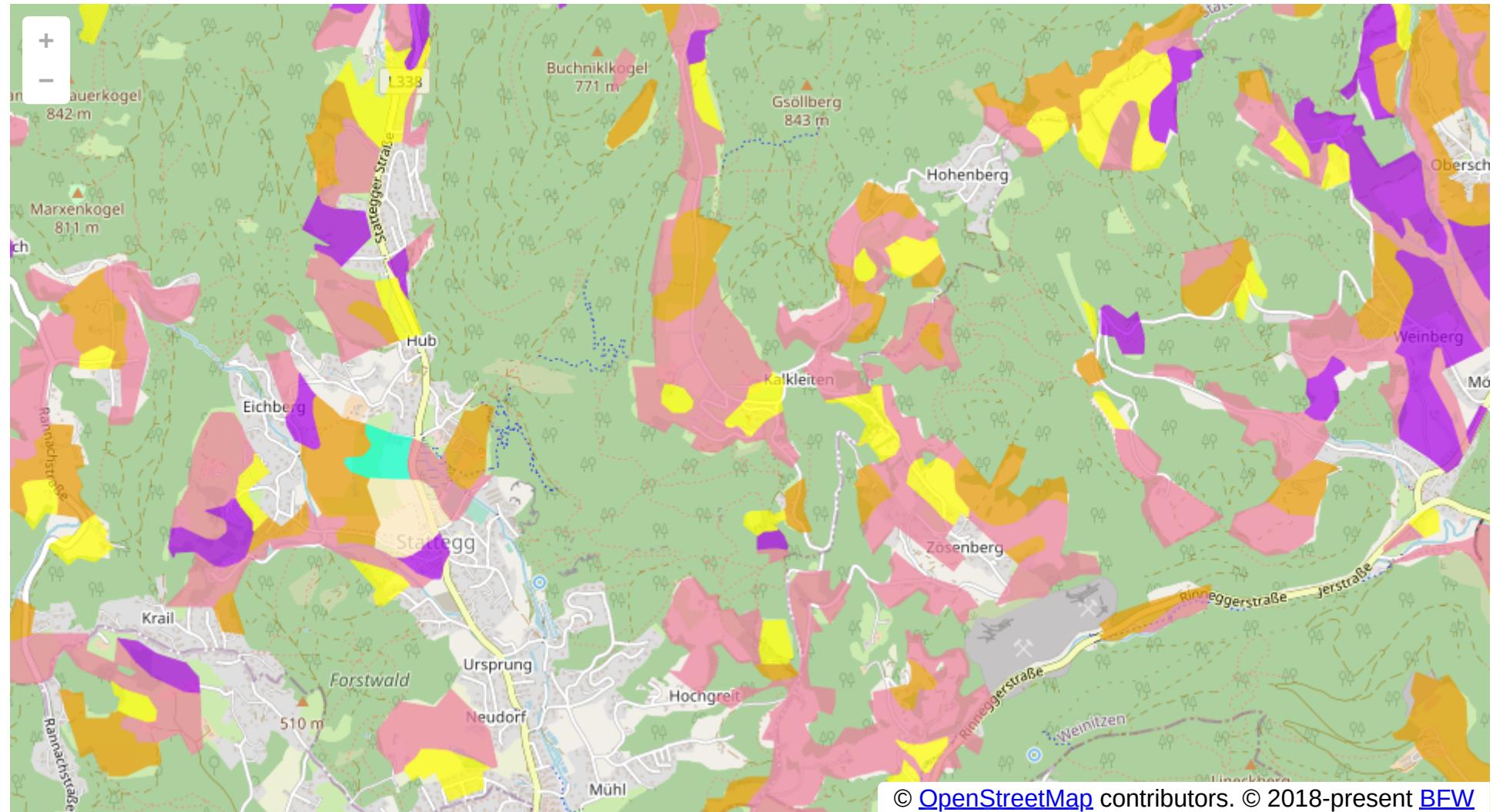
- Ideal für thematische Karten
- Mapbox Vector Tiles und Mapbox Style

```
import MVT from 'ol/format/MVT';
import createStyle from 'ol-mapbox-style/dist/stylefunction';

const bodenkarte = new VectorTileLayer({
  source: new VectorTileSource({
    format: new MVT(),
    url: myVectorTileServiceUrl
  })
});

bodenkarte.setStyle(
  createStyle(bodenkarte, myMapboxStyle, 'bodenkarte-tiles')
);
```

Vector Tiles



Mapbox Style

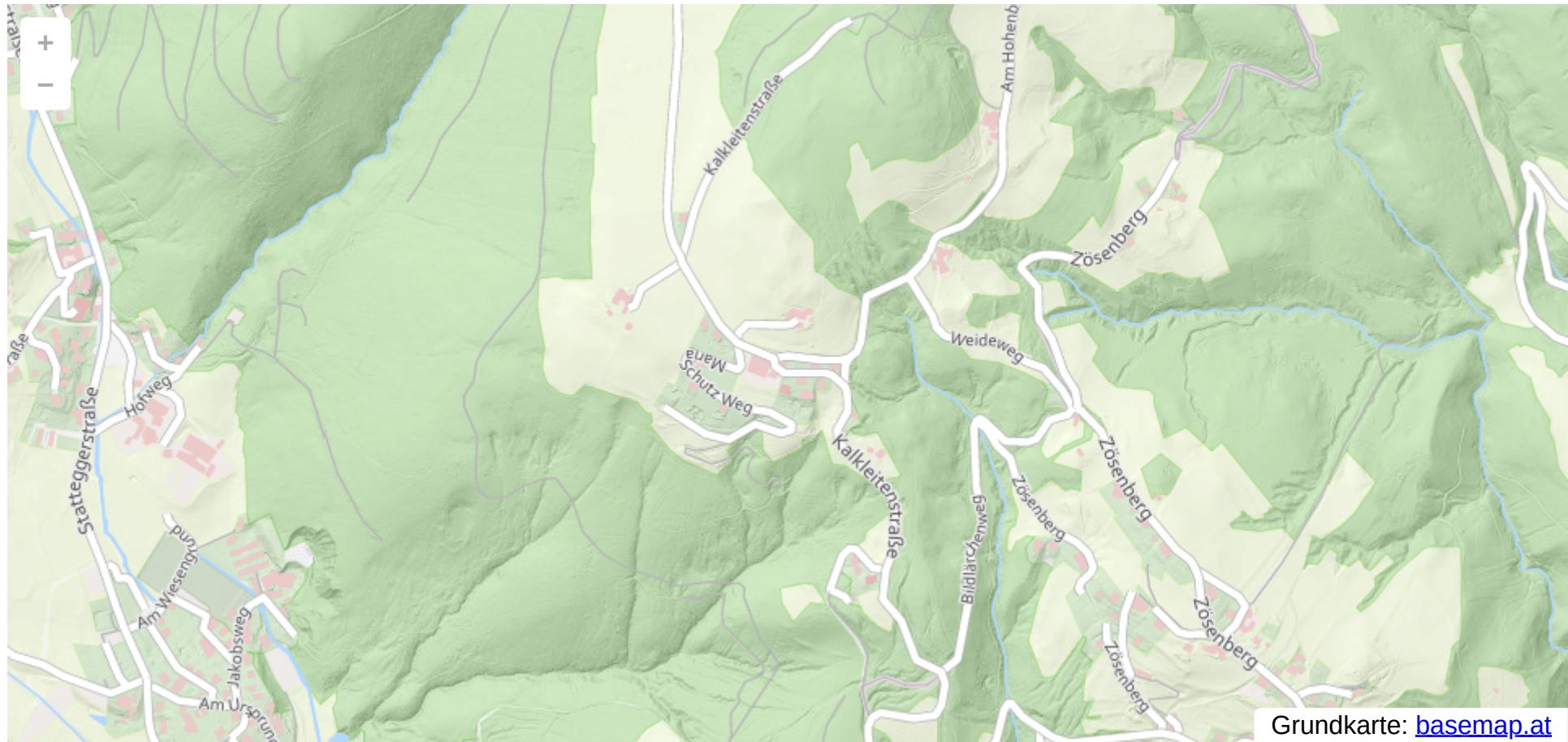
- Nicht nur für Vector Tile Layer
- Beschreibt eine komplette Karte (Center, Zoom, Layer, Styles)
- In OpenLayers verfügbar mit `ol-mapbox-style`

```
import olms from 'ol-mapbox-style';

olms('map', 'https://mymap.com/mystyle.json');
```

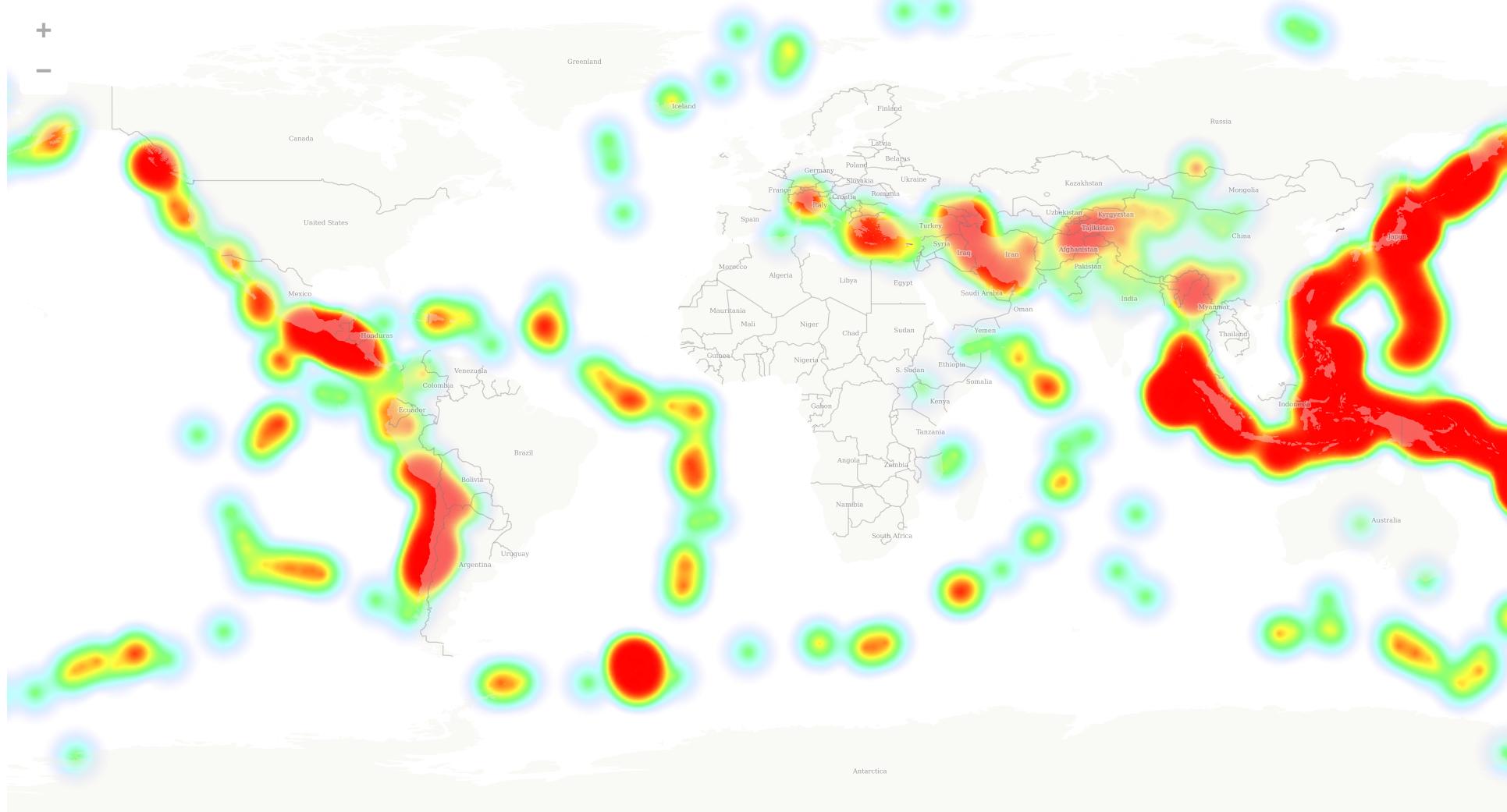
Vector Tiles

Nicht vom Hype blenden lassen!



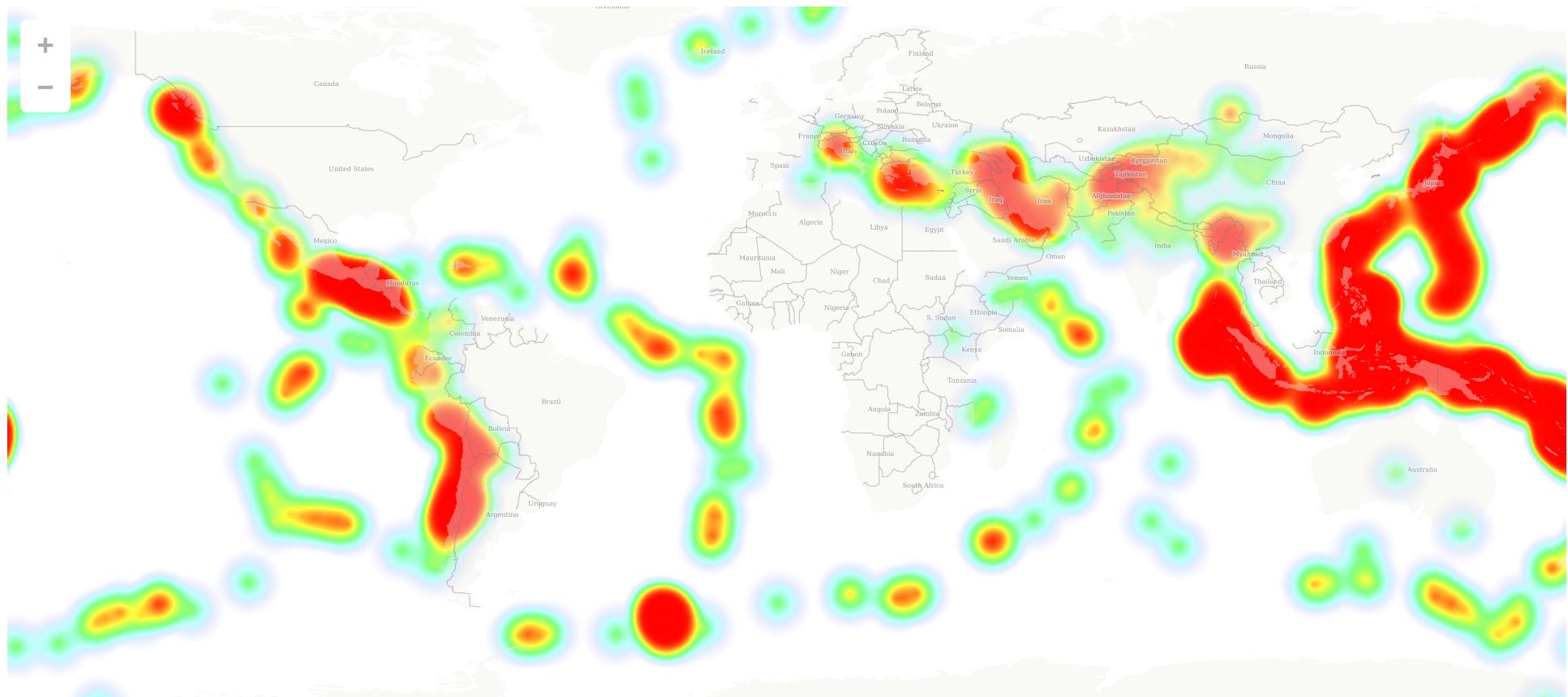
Shapefile D&D

- TODO Hoci



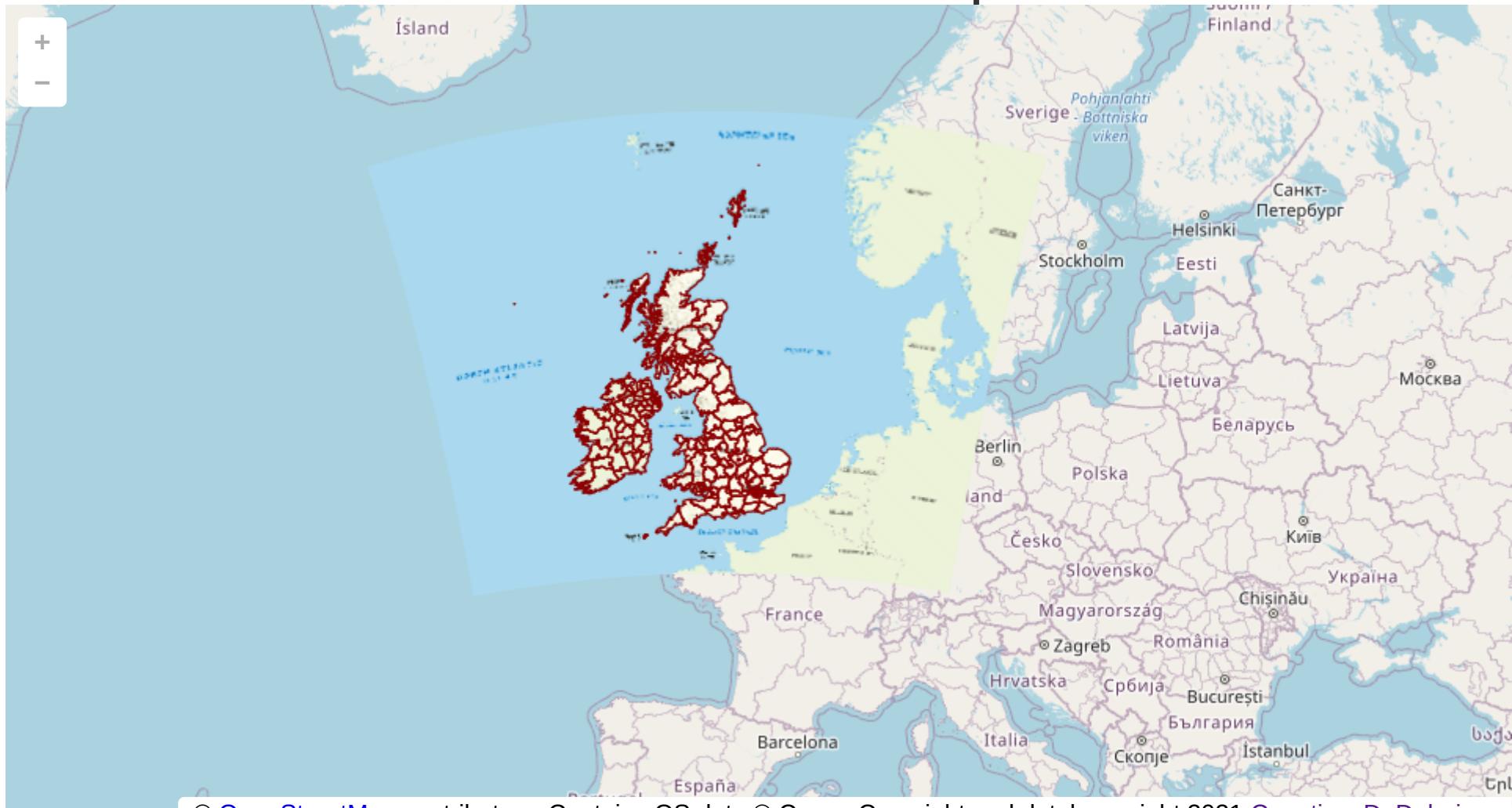
Raster Analyse/Manipulation

- TODO Hoci



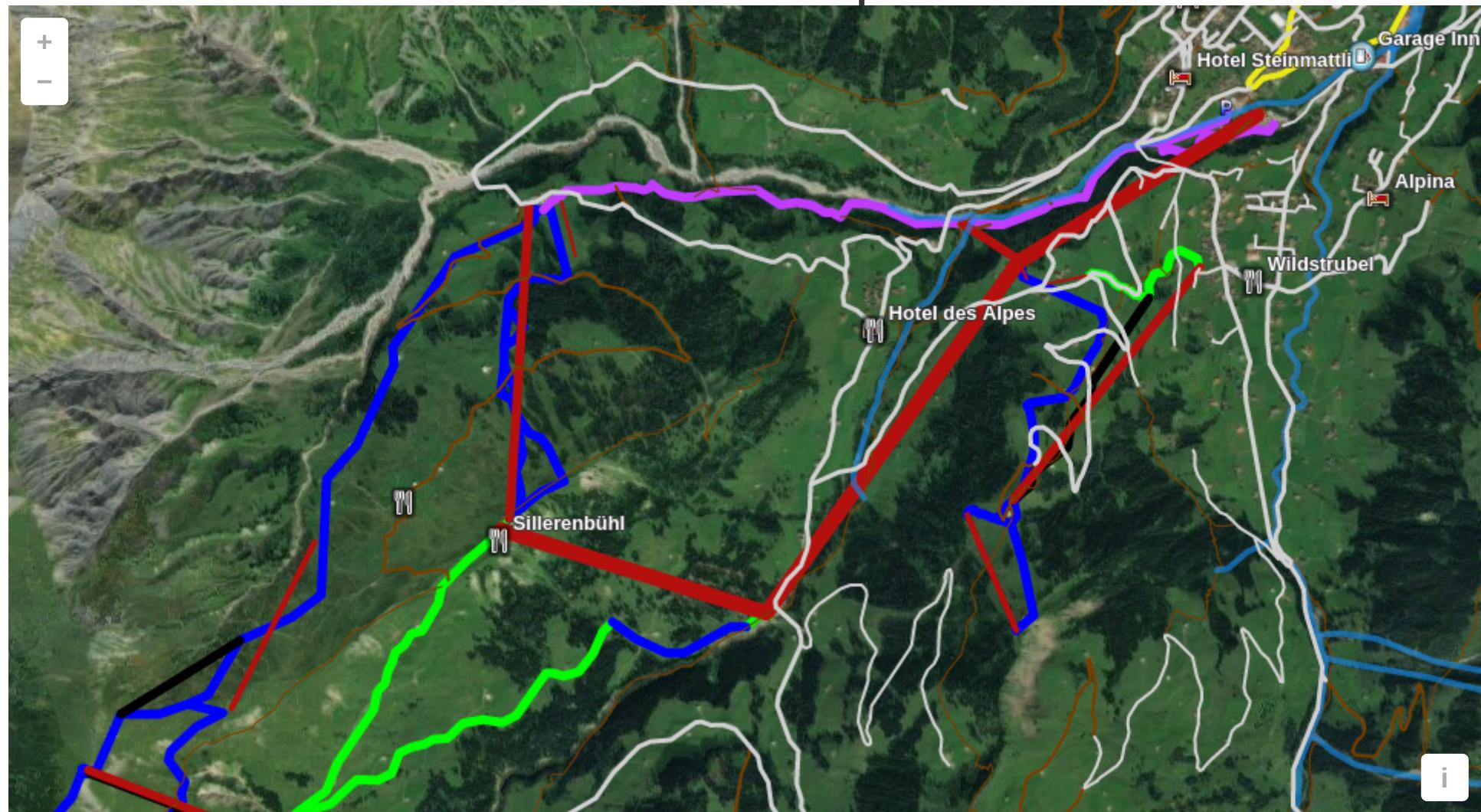
Reprojektion

- Raster- und Vektorquellen



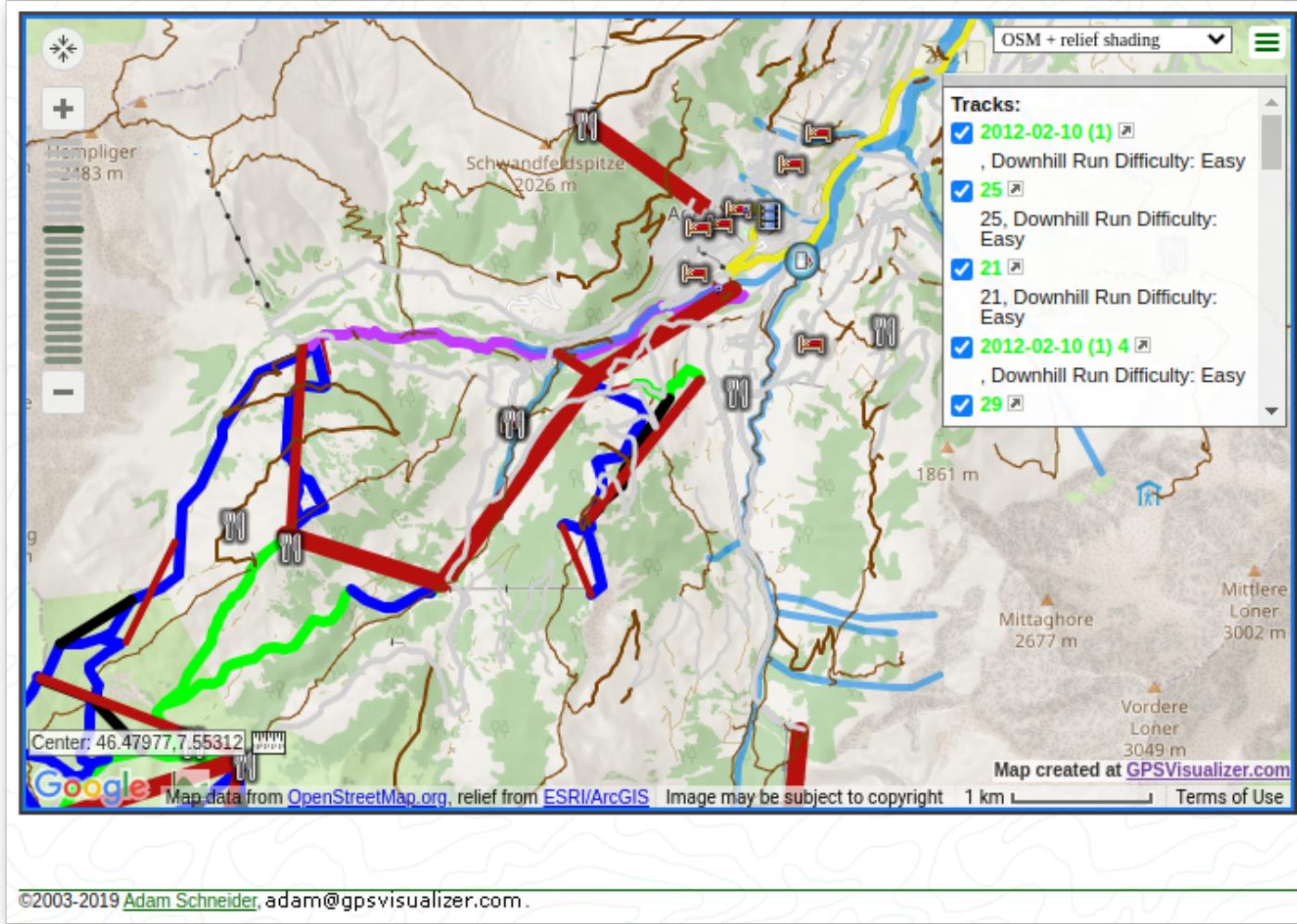
Vektordaten

- KML Beispiel



Vektordaten

• Vergleich mit GPS Visualizer Darstellung



Feature Editierung

- ~60 Zeilen Code

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[Clear](#) [Download](#)

...in Entwicklung

- altueller PR #12304

Scale and Rotate using Modify Interaction



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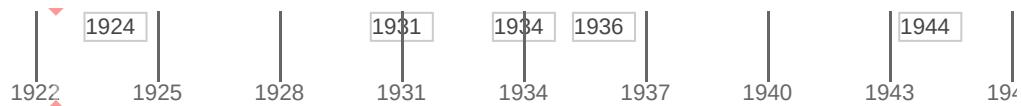
Geometry type

3rd party

Historical map

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1924



3rd party

ol-ext: print dialog

The [ol/control/PrintDialog](#) is dialog to format the map for printing or exporting.

It can handle canvas controls and legend control customisation on print.

See [internationalization example...](#)

Use [eligrey/FileSaver](#) or [MrRio/jsPDF](#) to save resulting image on print.

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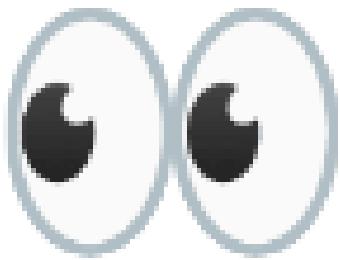
-

▼

Integrationen

- openlayers.org/3rd-party/
- daneben zahlreiche andere
 - GeoExt
 - react-geo
 - Wegue
 - AnOL, oder c2c
 - masterportal
 - usw. usf.

Ausblick



NDVI mit COG

NDVI from a Sentinel 2 COG



cog 3 ndvi 1

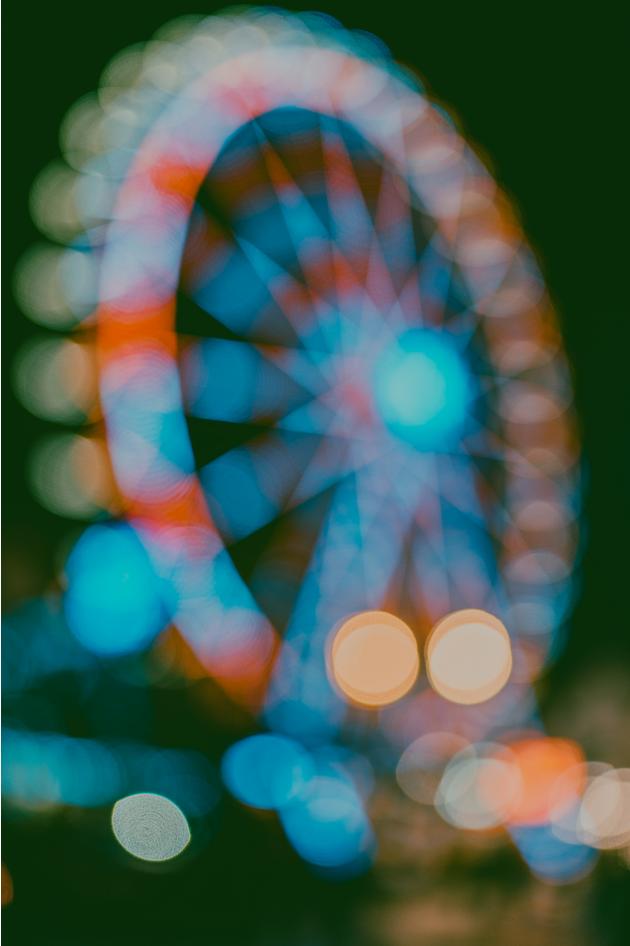
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The GeoTIFF layer in this example draws from two Sentinel 2 sources: a red band and a near infrared band. The layer style includes a color expression that calculates the Normalized Difference Vegetation Index (NDVI) from values in the two bands. The `interpolate` expression

Zukünftige Features



- geotiff.js Integration
- mehr WebGL
- ⇒ COG Support, s.o.
- OGC API
- (noch) besseres Typing & API-docs
- + Eure Beiträge 😇
- ...

Vielen Dank

Fragen & Anmerkungen?

Impressum

Impressum

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Lizenz

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