



Neues und Unbekanntes in OpenLayers

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Gliederung

- Über / Meta 
- Live Demo 
- Ausblick 

Über / Meta



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

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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 🚀

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Was ist OpenLayers?

“

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

– *openlayers.org, 28. Mai 2021*

- OpenSource (BSD)
- JavaScript
- OSGeo Projekt

- Viele Daten- & Layerquellen
- Interaktionen & Steuerelemente
- Aktiv entwickelt & große Community
- Gut dokumentiert & viele Beispiele
- Universell einsetzbar

Live Demo



Immediate Rendering

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

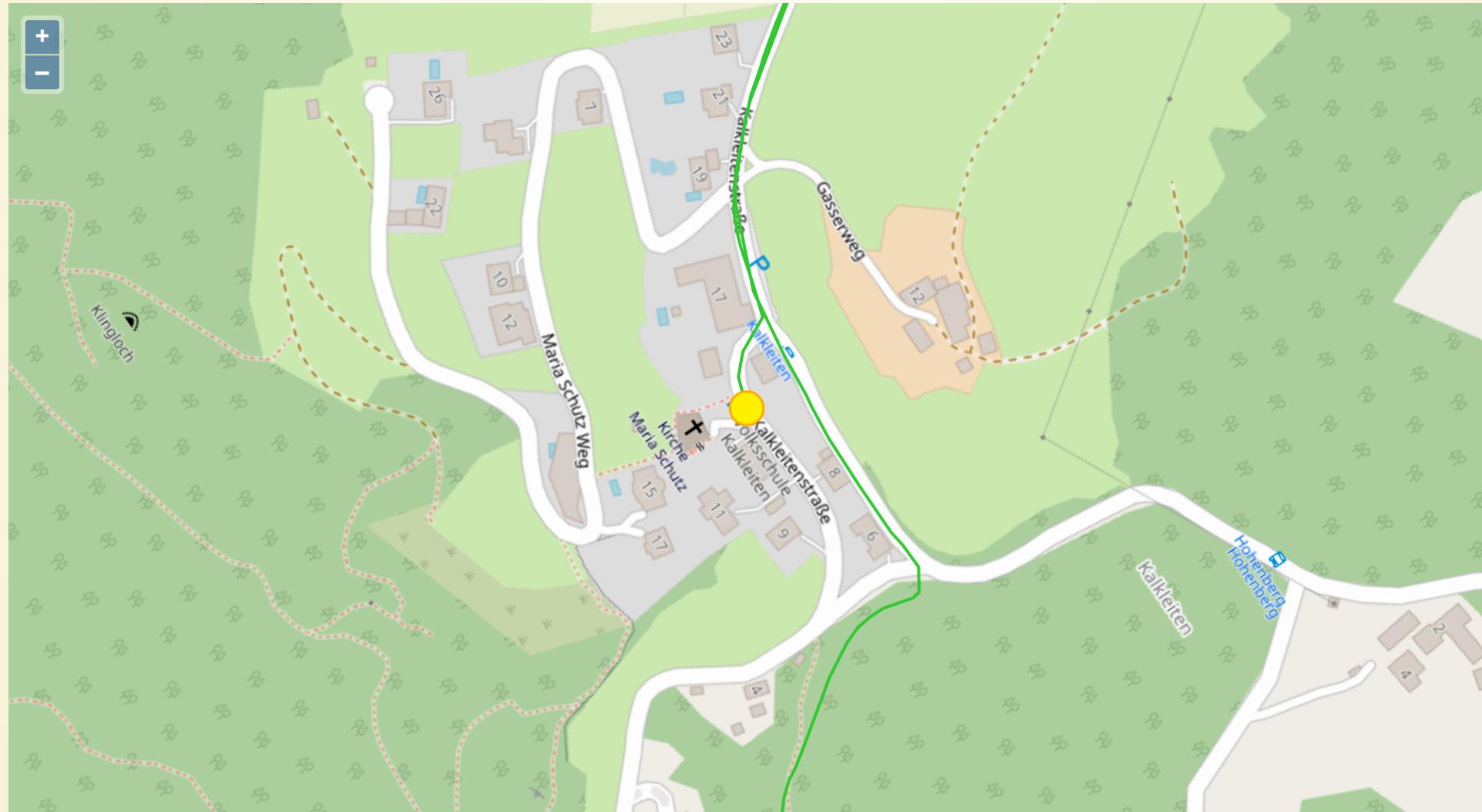
```
import toContext from 'ol/render';
layer.on('postrender', event => {
  const immediate = getVectorContext(event);
  immediate.setImageStyle(myCircleStyle);
  immediate.drawPoint(myPointGeometry);
});
```

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.

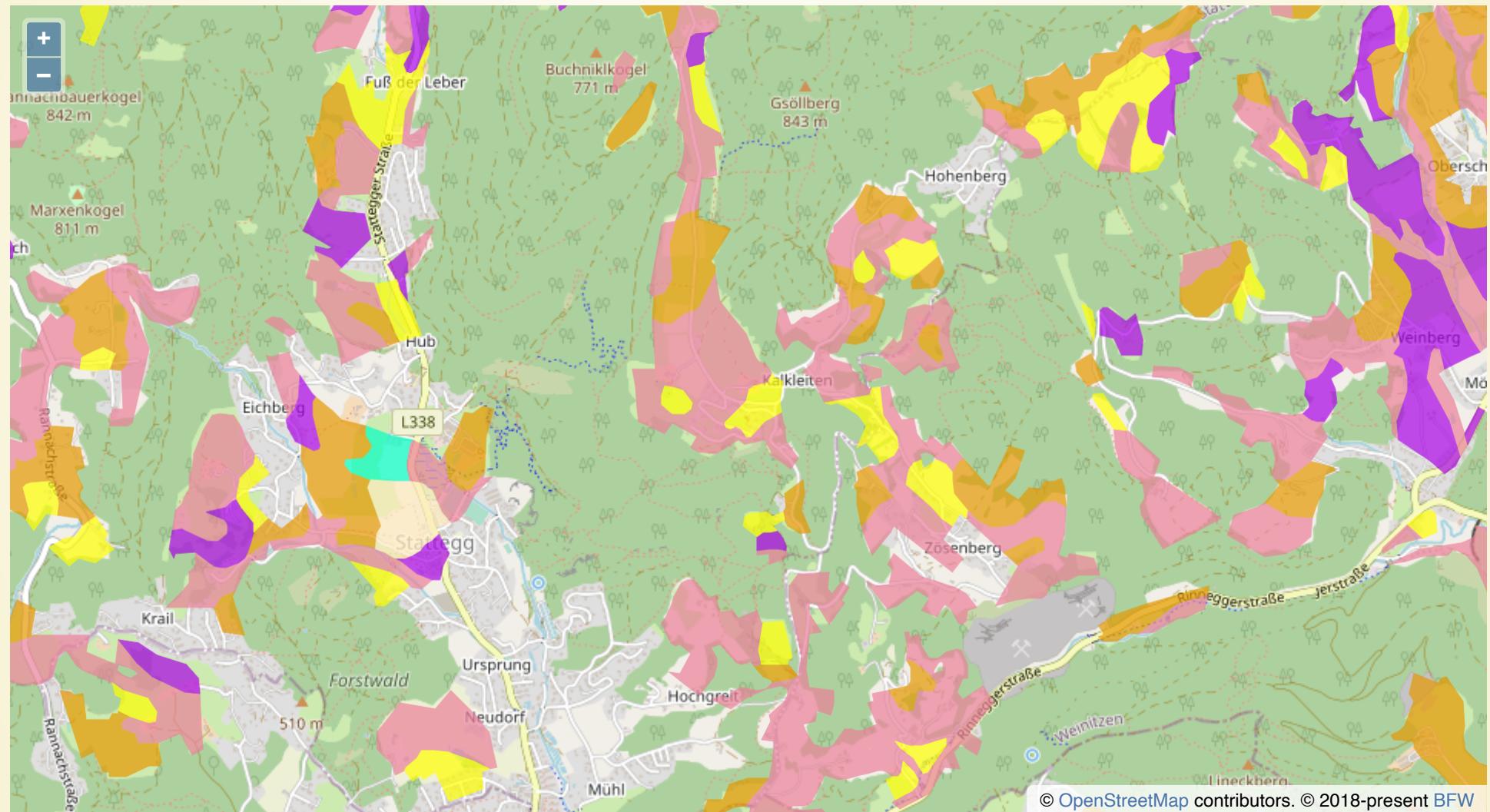
- Ideal für thematische Karten
- Mapbox Vector Tiles und Mapbox Style

```
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



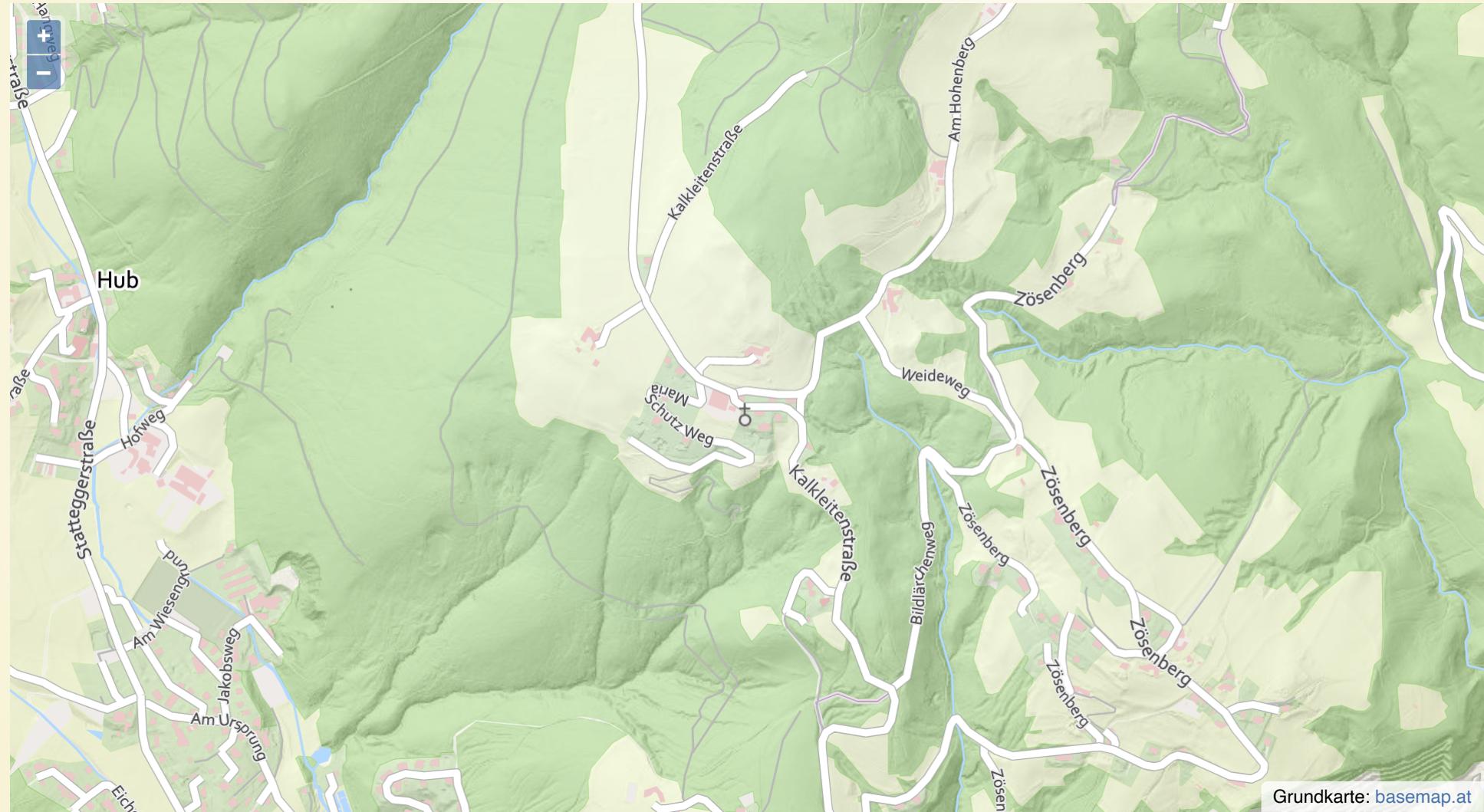
Mapbox Style

- 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

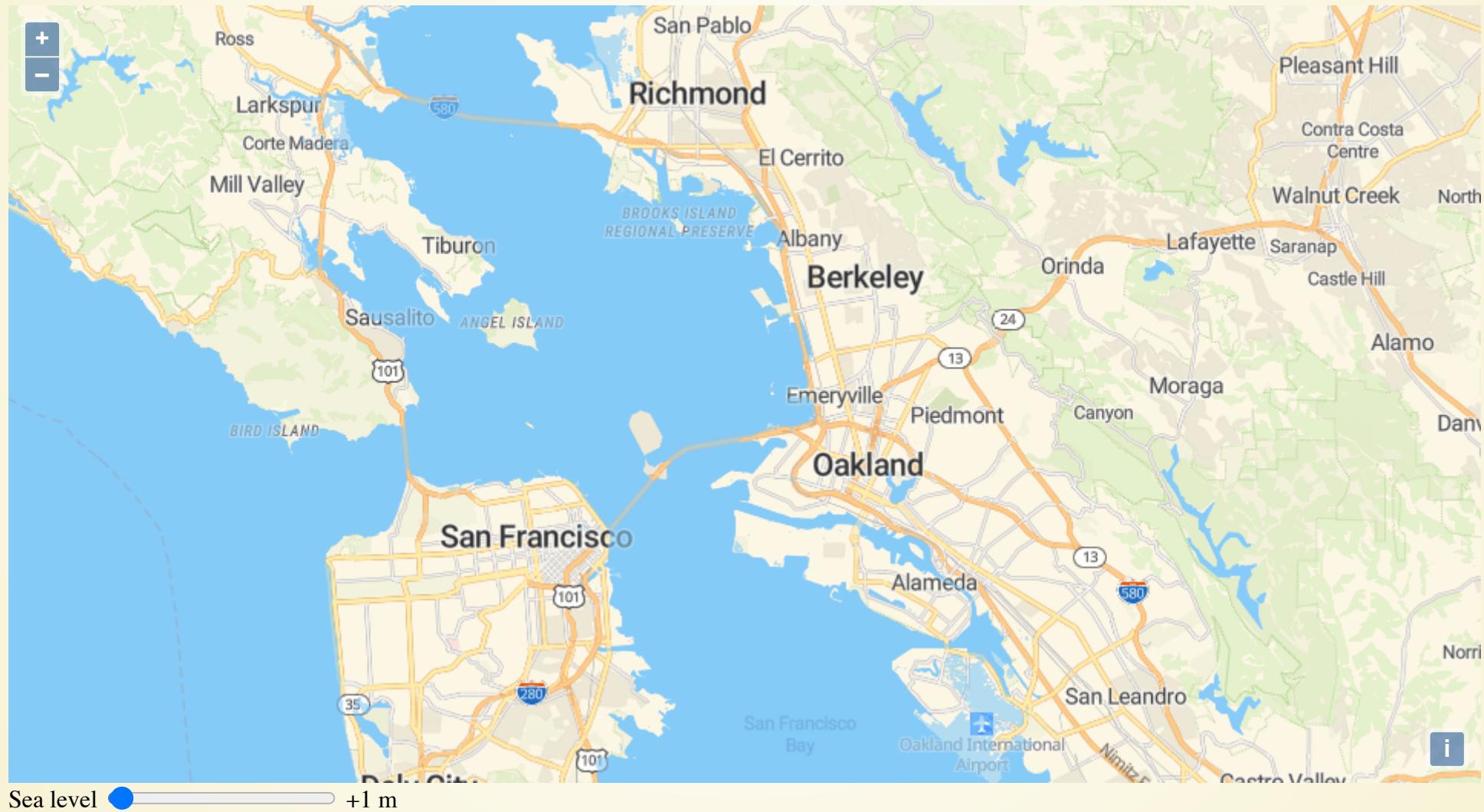


Raster Analyse

- Raster Source mit einer operation

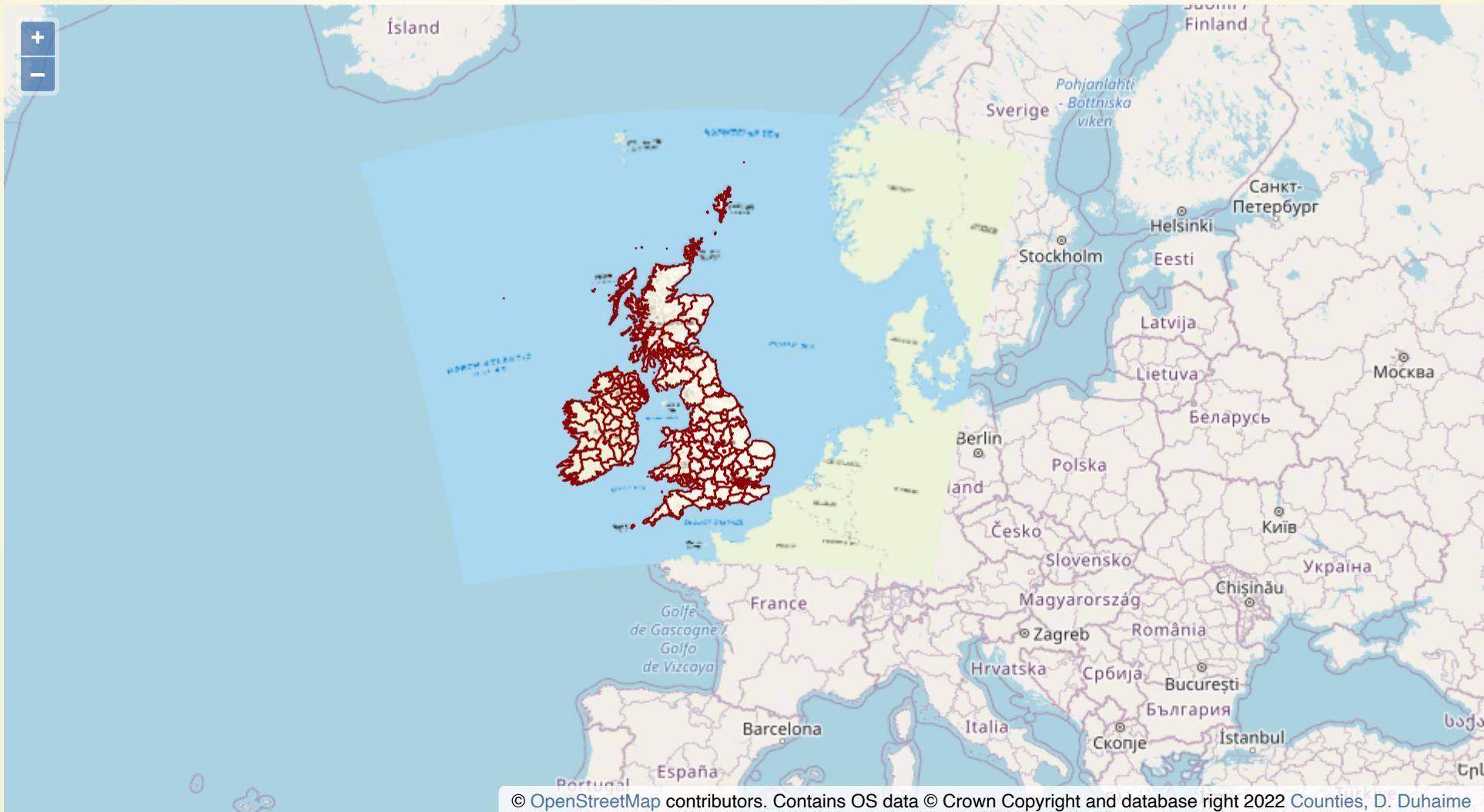
```
function flood(pixels, data) {  
  const pixel = pixels[0];  
  if (pixel[3]) {  
    const height =  
      -10000 + (pixel[0] * 256 * 256 + pixel[1] * 256 + pixel[2]) * 0.1;  
    if (height <= data.level) {  
      pixel[0] = 134; pixel[1] = 203; pixel[2] = 249; pixel[3] = 255;  
    } else {  
      pixel[3] = 0;  
    }  
  }  
  return pixel;  
}  
  
const raster = new RasterSource({  
  sources: [elevation],  
  operation: flood,  
});
```

Raster Analyse



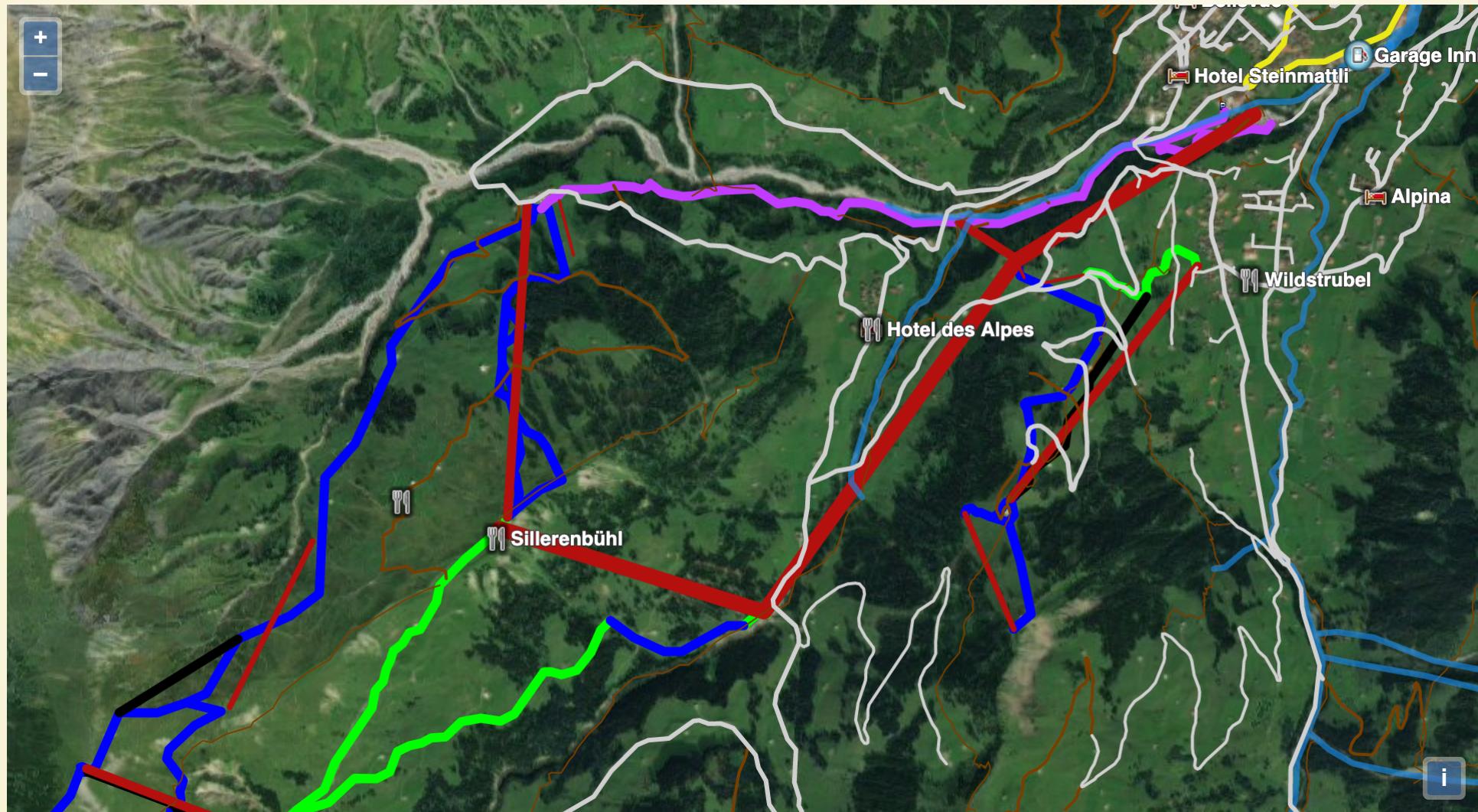
Reprojektion

- Raster- und Vektorquellen



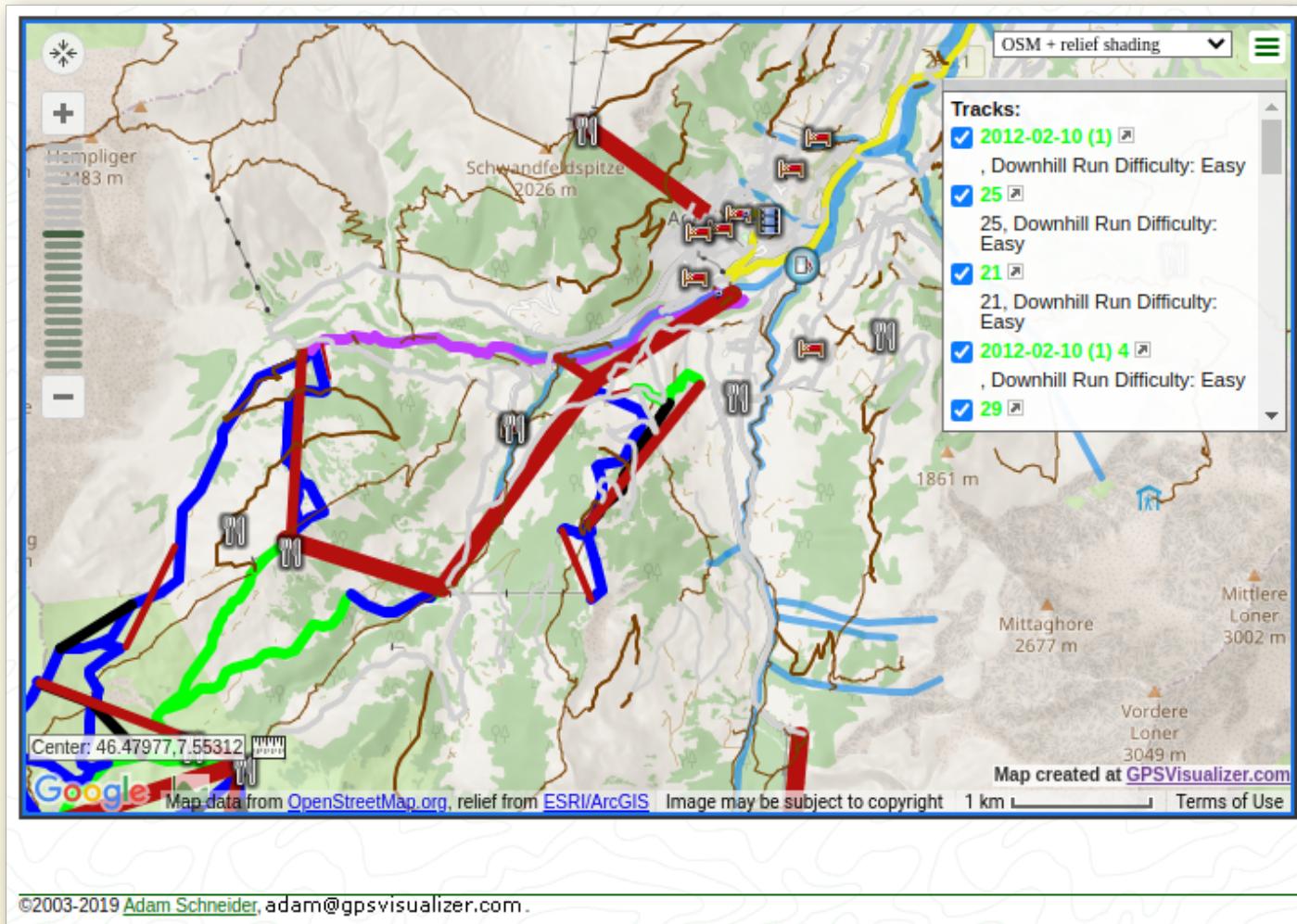
Vektordaten

- KML Beispiel



Vektordaten

• Vergleich mit GPS Visualizer Darstellung



Feature Editierung

- ~60 Zeilen Code



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

...in Entwicklung

- aktueller PR #12304

Scale and Rotate using Modify Interaction

draw 11 edit 12 modify 7 vector 62 scale 3 rotate 3

+

-

Geometry type



3rd party

Historical map

+

-

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.

+

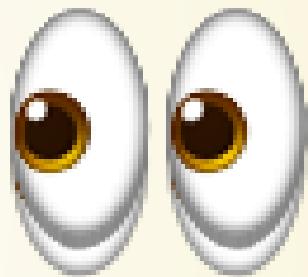
-



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



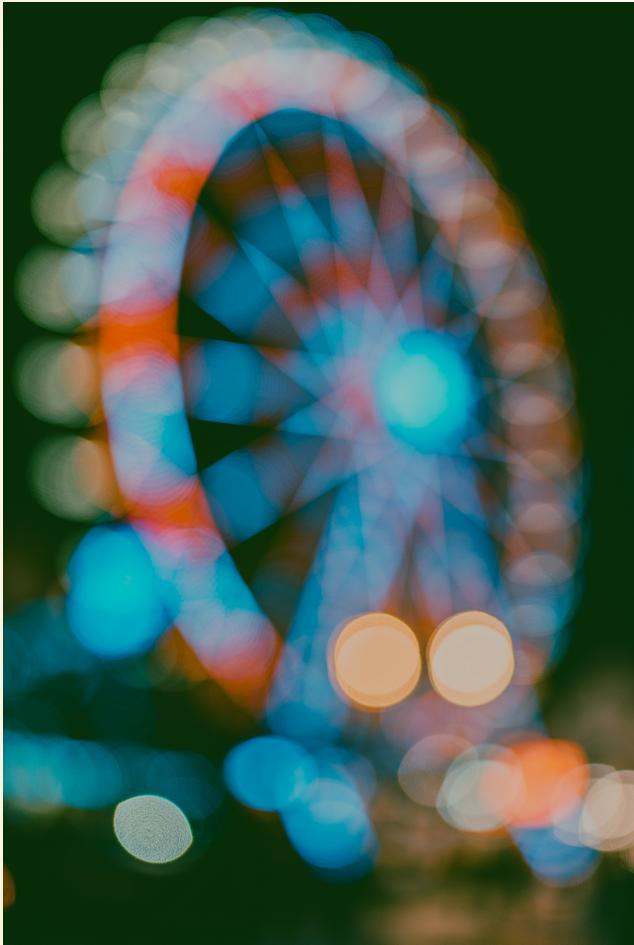
cog 5 ndvi 2

+

-

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 palette that maps NDVI values to different colors. NDVI is calculated as the ratio of the near infrared band to the red band. The color palette ranges from dark purple (low NDVI) to yellow (high NDVI).

Zukünftige Features



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

Vielen Dank

Fragen & Anmerkungen?

Impressum

Impressum

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Lizenz

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Vortragsfolien, PDF-Version, git repository