MapTiler SDK JS, la experiencia MapLibre con esteroides

maptiler

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Geotech/spatial data science

MapLibre

MapLibre GL JS v4.x

Features y mejoras

- Eliminar todos los getters y setters globales de `maplibregl`, los siguientes métodos han cambiado:
  a. `maplibregl.version` => `getVersion()`
  b. `maplibregl.workerCount` => `getWorkerCount()`, `setWorkerCount(...)`
  c. `maplibregl.maxParallelImageRequests` => `getMaxParallelImageRequests()`, `setMaxParallelImageRequests (...)`
  d. `maplibregl.workerUrl` => `getWorkerUrl()`, `setWorkerUrl(...)`
- La atribución está activada por defecto, `MapOptions.attributionControl` ahora es del tipo que maneja el control, se eliminó `MapOptions.customAttribution`
- Se cambió la interfaz de `Source` para devolver promesas en lugar de callbacks
- Se modificó el método `map.loadImage` para devolver una prome en lugar de callback
- Se agregó la opción `opacidad` y el método `setOpacity` a los marcadores
- Nuevo método `setUrl` en RasterTileSource para actualizar dinámicamente el recurso TileJSON existente
- Actualización de los métodos `addClass` y `removeClass` del `Popup` para devolver una instancia de Popup
- Se agregó el método `getData` para los Source GeoJSON para poder obtener todas las features del source
- Mejoras en el terreno y corrección de errores

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MapLibre GL JS

v3.x

`map.loadImage`

```
map.on('load', function () {
  map.loadImage('https://upload.wikimedia.org/wikipedia/commons/7/7c/201408_cat.png',
    function (error, image) {
      if (error) throw error;
      map.addImage('cat', image);
      ...
      map.addLayer({
        'id': 'points',
        'type': 'symbol',
        'source': 'point',
        'layout': {
          'icon-image': 'cat',
          'icon-size': 0.25
        }
      });
    }
  );
});
```

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MapLibre GL JS

v4.x

`map.loadImage`

```
map.on('load', async function () {
  const image = await map.loadImage(
    'https://upload.wikimedia.org/wikipedia/commons/7/7c/201408_cat.png');

  map.addImage('cat', image.data);
  ...
  map.addLayer({
    'id': 'points',
    'type': 'symbol',
    'source': 'point',
    'layout': {
      'icon-image': 'cat',
      'icon-size': 0.25
    }
  });
});
```

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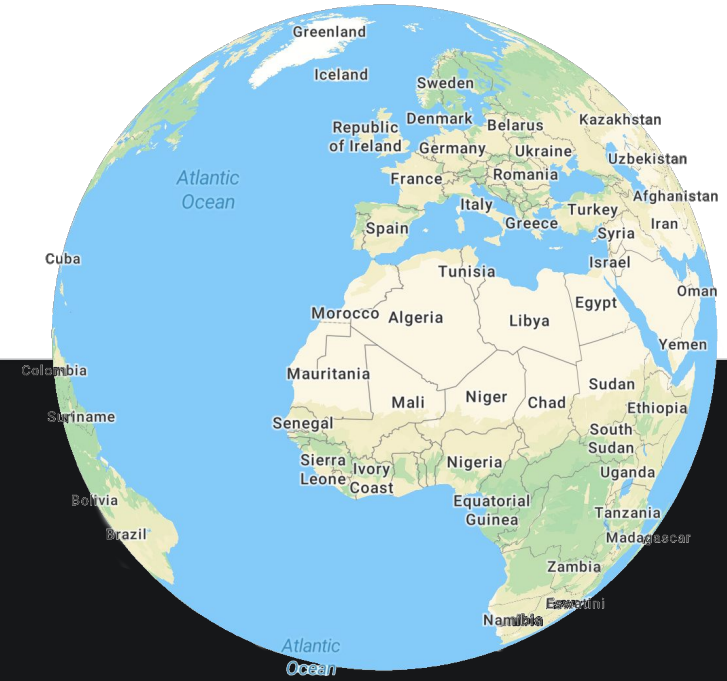
MapLibre GL JS

Globe

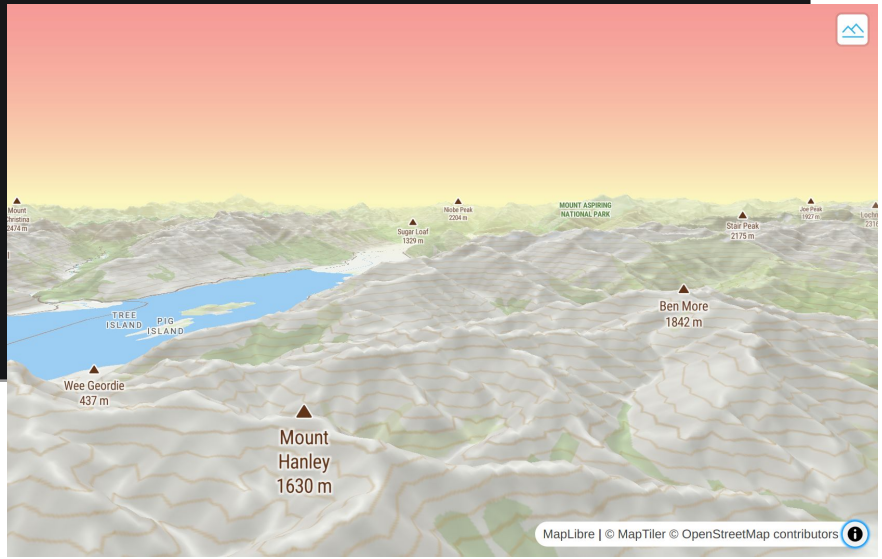


```
const map = new maplibregl.Map({
  container: 'map',
  projection: 'globe',
  zoom: 0,
  hash: true,
  center: [137.915089, 36.25956],
  style:
    'https://api.maptiler.com/maps/satellite/style.json?key=YOUR_MAPTILER_API_KEY_HERE',
});
```

MapLibre GL JS

Sky (Atmosphere)

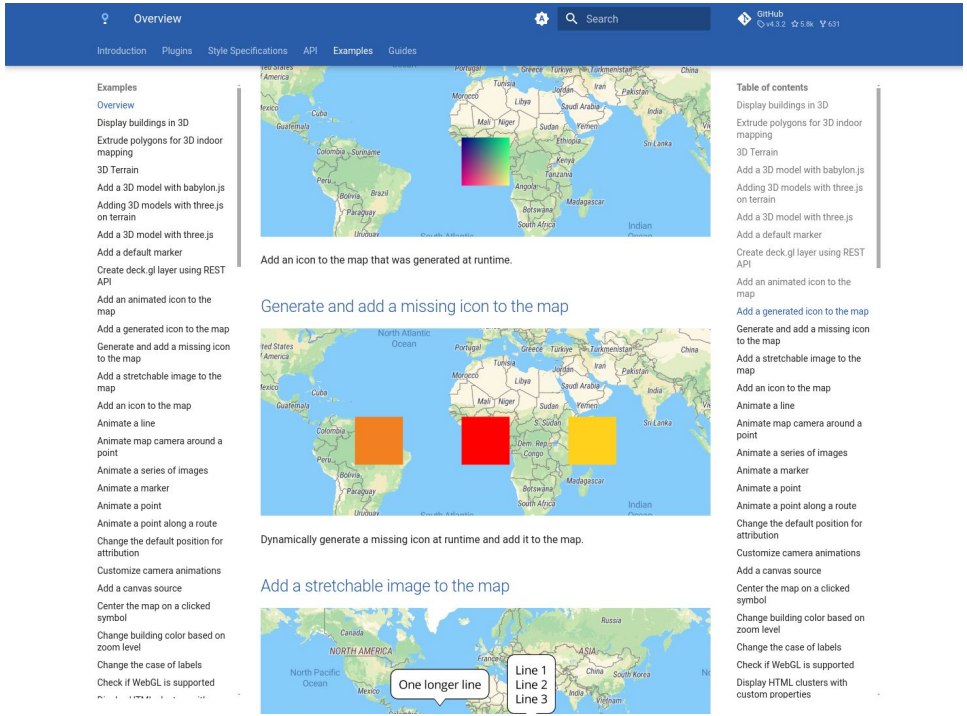
```
{
  "version": 8,
  "sprite": "https://api.maptiler.com/maps/satellite/sprite",
  "glyphs": "https://api.maptiler.com/fonts/{fontstack}/{range}.pbf?key=YOUR_MAPTILER_API_KEY_HERE",
  "metadata": {...},
  "center": [...],
  "zoom": 15,
  "pitch": 85,
  "sources": {...},
  "layers": [...],
  "terrain": {
    "source": "terrain",
    "exaggeration": 1
  },
  "sky": {
    "sky-color": "#199EF3",
    "fog-color": "#daeff0",
    "horizon-blend": 1,
    "fog-blend": 1
  }
}
```



MapLibre GL JS

NEW

Documentation



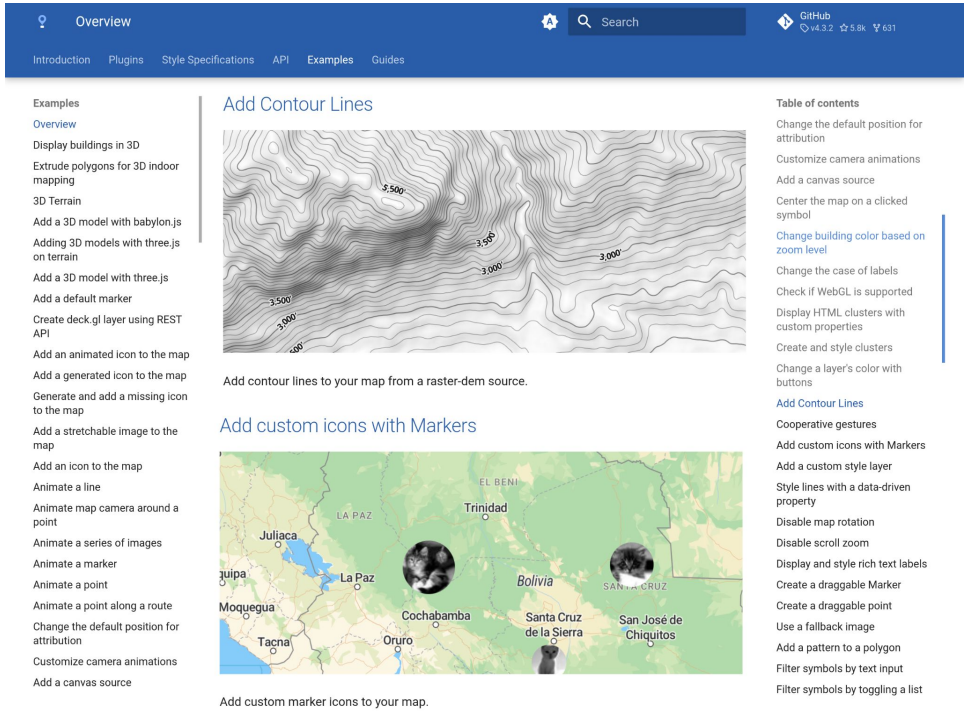
https://maplibre.org/maplibre-gl-js/docs/

MapLibre

MapLibre GL JS

NEW

Documentation



https://maplibre.org/maplibre-gl-js/docs/

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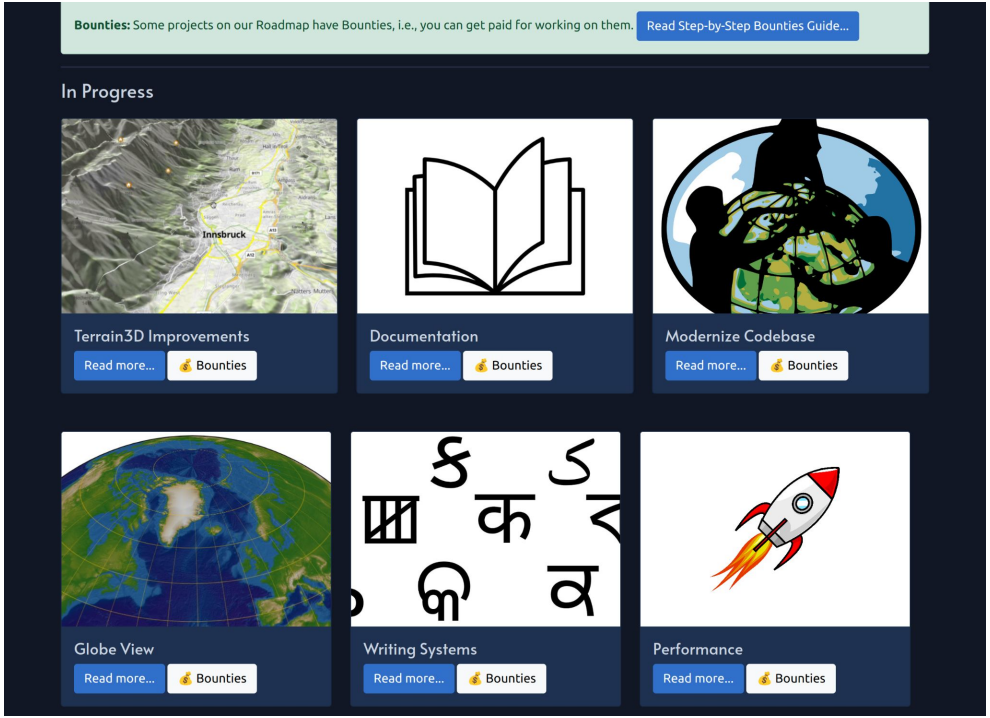
MapLibre GL JS

Bounties 💰 🤑

https://maplibre.org/roadmap/



https://maplibre.org/roadmap/step-by-step-bounties-guide/

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Sponsors 🤞 💸

https://maplibre.org/sponsors/

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MapLibre GL JS

Última hora

https://maplibre.org/jobs/

- Coordinator
- Graphics Engineer - MapLibre GL JS

MapLibre Tile Format - MLT

Nuevo formato vector tiles

(experimental)

Sufijo .mlt

6x reducción de tamaño vs MVT

Expresion `distance`, devuelve la distancia más corta en metros entre la entidad evaluada y la geometría de entrada.

```
"some-property": ["distance", {"type": "Point", "coordinates": [0, 0]}]
```

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MapTiler SDK JS

- Una extensión de **MapLibre GL JS**
- JavaScript / TypeScript open source library (BSD-3)
- Acceso a la API del MapTiler Cloud (geocoding, geolocation, transformación de coordenadas)
- Terreno 3D, Weather, AR Control, Profile Control, Layer Helpers, etc.
- No vendor lock-in (tilesets de cualquier proveedor)

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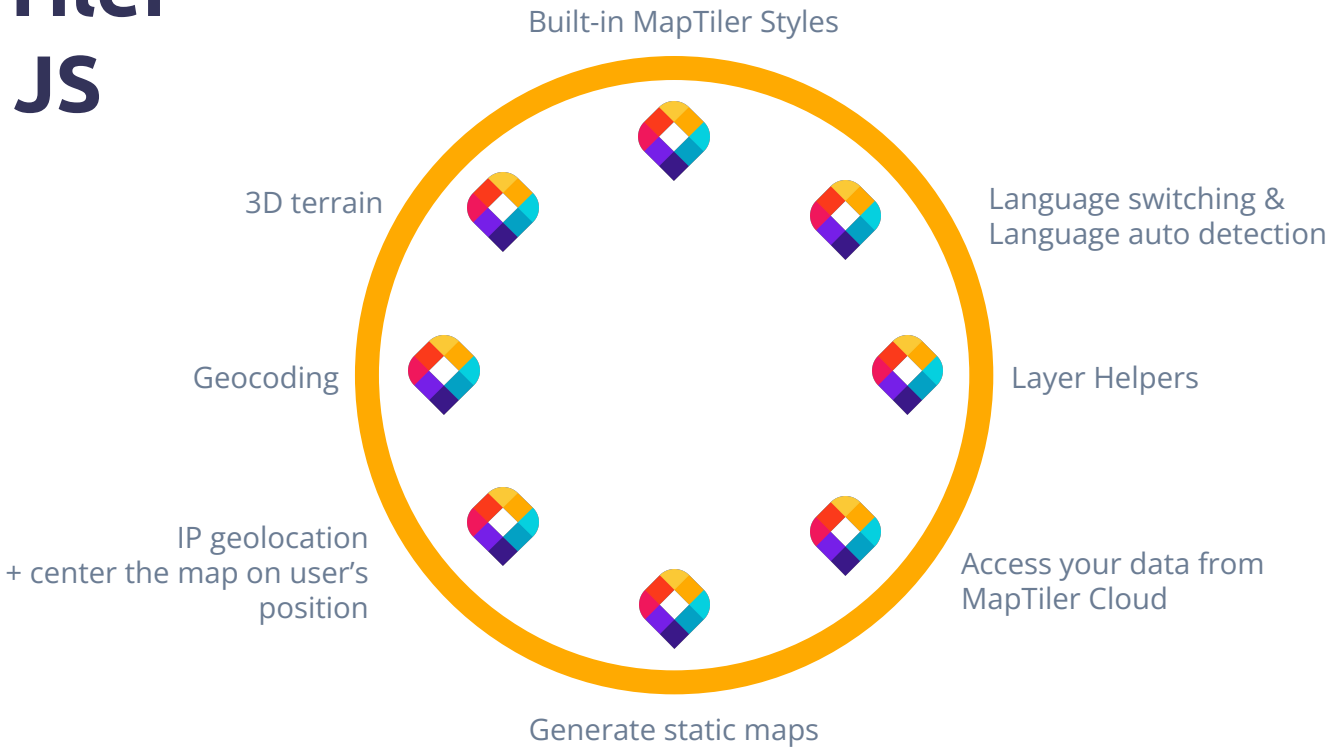
MapTiler SDK JS



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MapTiler SDK JS

Instalación

En tu proyecto JS/TS con NPM

```
# Install MapTiler SDK
npm install @maptiler/sdk
```

En un proyecto con vanilla JS/HTML desde CDN

```
<!-- in the <head> of HTML document -->
<script src="https://cdn.maptiler.com/maptiler-sdk-js/latest/maptiler-sdk.umd.min.js"></script>
<link href="https://cdn.maptiler.com/maptiler-sdk-js/latest/maptiler-sdk.css" rel="stylesheet" />
```

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MapTiler SDK JS

Objeto de configuración

```
import * as maptilersdk from '@maptiler/sdk';

maptilersdk.config.apiKey = "YOUR_MAPTILER_API_KEY_HERE";
maptilersdk.config.primaryLanguage = maptilersdk.Language.SPANISH;
maptilersdk.config.caching = false; //Default true
maptilersdk.config.session = false; //Default true
```

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MapTiler SDK JS

Opciones del mapa

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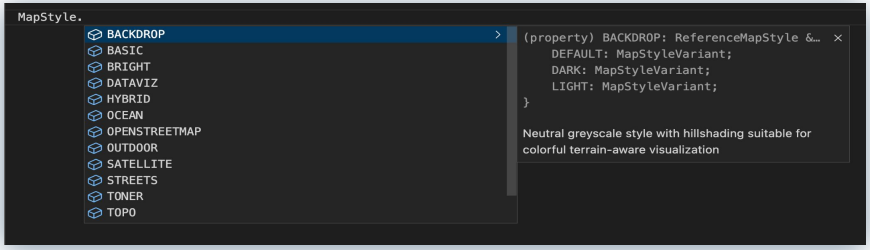
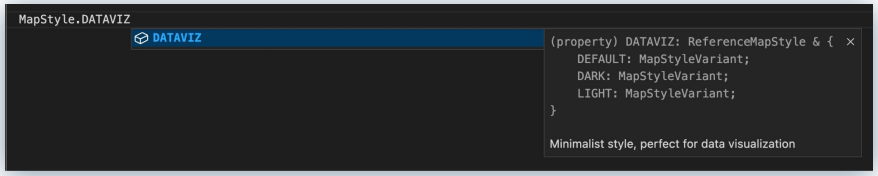
MapTiler SDK JS

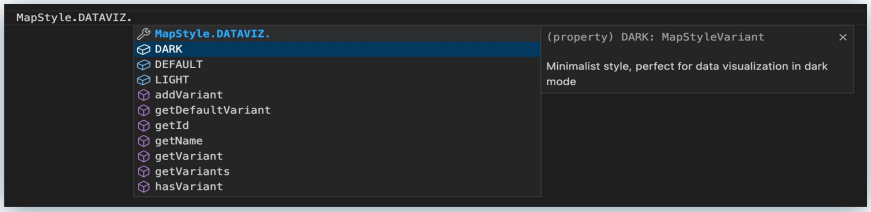
Estilos y variantes

¡Nuestro equipo de cartógrafos crea y mantiene muchos estilos de mapas, adecuados para todo tipo de usos!

Cada uno está muy bien documentado y es accesible con el autocompletado VSCode IntelliSense.







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MapTiler SDK JS

Estilos y variantes

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MapTiler SDK JS

Define y actualiza el estilo de tu mapa

```
// Set style from the constructor
const map = new Map({
  container,
  style: MapStyle.OUTDOOR,
});

// Update it later, will autocomplete nicely
map.setStyle(MapStyle.BACKDROP);

// You can also use the style ID
map.setStyle("streets-v2");

// Especially useful for your custom styles
map.setStyle("c912ffc8-2360-487a-973b-59d037fb15b8");

// Still possible to do it with a full URL
// (API key necessary only if different than the one you set in the config)
map.setStyle("https://api.maptiler.com/maps/winter-v2/style.json?key=API_KEY");

// You may want to dynamically create a style and pass the JS object
map.setStyle({id: "custom_style", sources: {...}, layers: [...], ...});
```

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MapTiler SDK JS

Idiomas

El idioma *fallback* es siempre el idioma local, aka. ***{name}***

```
// Set language from the constructor
const map = new Map({
  container,
  language: Language.ENGLISH,  // Force the map to use English labels
});

// Update the language later on
map.setLanguage(Language.ALBANIAN);

// You can also use the 2-letter iso code
map.setLanguage("sq");

// Special non-language flags exist:
Language.AUTO       // [DEFAULT] uses the language defined in the web browser

Language.LOCAL      // Uses the language local to each country

Language.LATIN      // Uses a default with latin characters

Language.NON_LATIN  // Uses a default with non-latin characters

Language.STYLE_LOCK // to strictly use the language defined in the style.
                    // Prevents any further language update
```

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Idiomas

Incluye soporte para idiomas “right-to-left” (Hebrew, Arabic, etc) sin necesidad de ningún plugin.

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MapTiler SDK JS

Terreno 3D

```
const map = new maptilersdk.Map({
  container: 'map', // container's id or
  style: maptilersdk.MapStyle.STREETS,
  center: [8.5419, 47.3799], // starting
  zoom: 10.68, // starting zoom
  terrain: true,
  terrainControl: true,
});
```

MapLibre

```
map.on('style.load', () => {
  map.addSource('terrainSource', {
    'type': 'raster-dem',
    'url': `https://api.maptiler.com/tiles/terrain-rgb-v2/tiles.json?key=${key}`,
    'tileSize': 512,
    'maxzoom': 14
  });
  // add the DEM source as a terrain layer with exaggerated height
  map.setTerrain({ 'source': 'terrainSource', 'exaggeration': 1.5 });
  // add the TerrainControl
  map.addControl(
    new maplibregl.TerrainControl({
    source: 'terrainSource',
    exaggeration: 1
    })
  });
});
```

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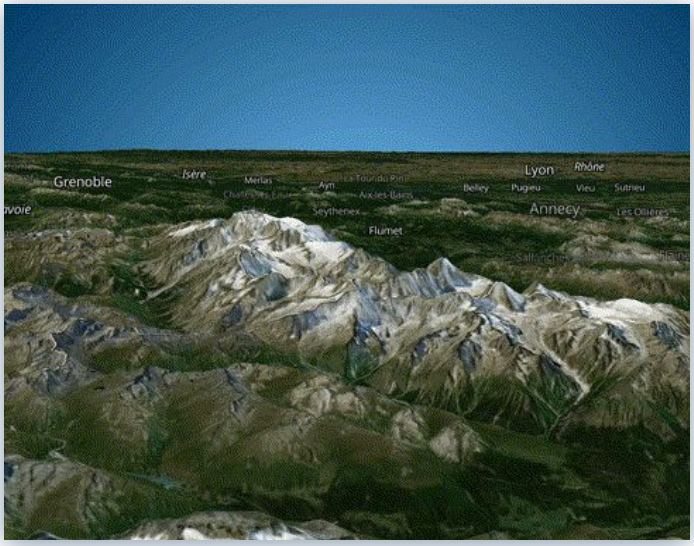
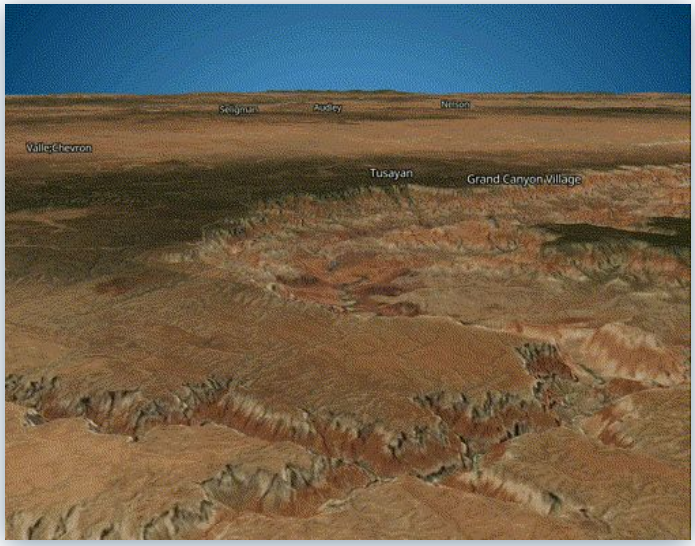
MapTiler SDK JS

Terreno 3D





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MapTiler SDK JS

Otras APIs

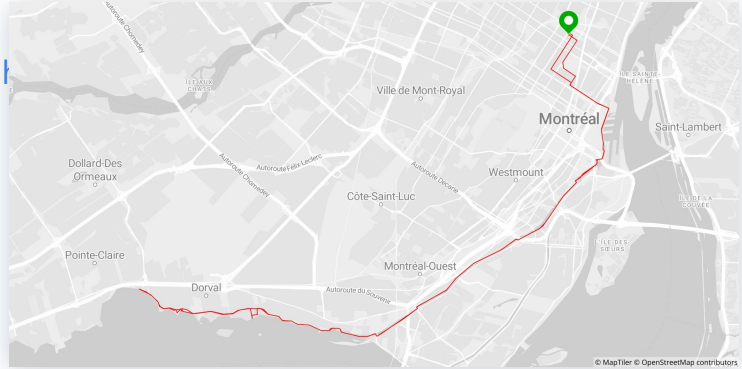
maptiler CLIENT JS

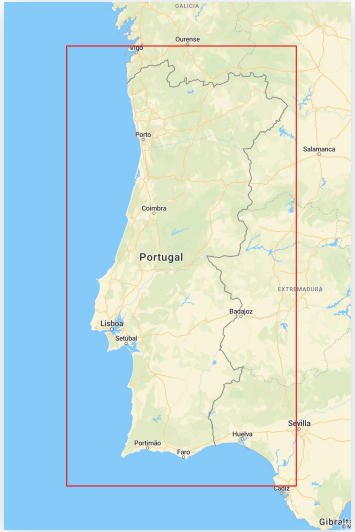
https://docs.maptiler.com/client-js/

```
import { config, geocoding, geolocation, staticMaps, data, coordinates } from "@maptiler/sdk";

// Set your MapTiler Cloud API key
config.apiKey = "YOUR_API_KEY";

// Look for a city, a country, an address, etc.
const results = await geocoding.forward("Prizren");

// Reverse geocoding + many options. Result as GeoJSON
// Get a place info from [lng, lat]
const resultRGC = await geocoding.reverse([6.249638, 46.402056]);

// Get your own data stored on MapTiler Cloud (GeoJSON)
const resultData = await data.get("2df5ecc4-3ae1-4d1e-99a2-182256486387");

// IP geolocation
// Get place info of an end user: country, city, timezone, language spoken in area + more
const resultGL = await geolocation.info()

// Transform coordinates from one EPSG to another
// EPSG.io vibes, but in JS/TS!
// Here converting [lng, lat] from EPSG:4326 (WGS84, the default) to Lambert-93
const resultTransf = await coordinates.transform([1, 45], {targetCrs: 9793});

// Static map, generates a link. Many options, you can add paths and markers
const imageLinkCentered = staticMaps.centered([7, 46.8], 5, options);
```

MapTiler SDK JS

Ejemplos de mapas estáticos





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MapTiler SDK JS

Layer Helpers Puntos

```
import { helpers } from "@maptiler/sdk";

helpers.addPoint(map, {
  data: "public-schools.geojson",
  pointColor: "#F1175D",
});
```

MapLibre

```
map.addSource('point', {
  'type': 'geojson',
  'data': data
});

map.addLayer({
  'id': 'point',
  'source': 'point',
  'type': 'circle',
  'paint': {
    'circle-radius': 10,
    'circle-color': '#007cbf'
  }
});
```

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https://docs.maptiler.com/sdk-js/api/helpers/

MapTiler SDK JS

Layer Helpers Puntos

```
helpers.addPoint(map, {
  data: "public-schools.geojson",
  property: "students",
  pointColor: ColorRampCollection.PORTLAND.scale(200, 2000).resample("ease-out-sqrt"),
  pointOpacity: 0.8,
  minPointRadius: 6,
  maxPointRadius: 30,
  showLabel: true,
  zoomCompensation: false,
})
```

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https://docs.maptiler.com/sdk-js/api/helpers/

MapTiler SDK JS

Layer Helpers Cluster

```
await maptilersdk.helpers.addPoint(map, {
  data: 'schools.geojson',
  cluster: true,
});
```

https://docs.maptiler.com/sdk-js/api/helpers/

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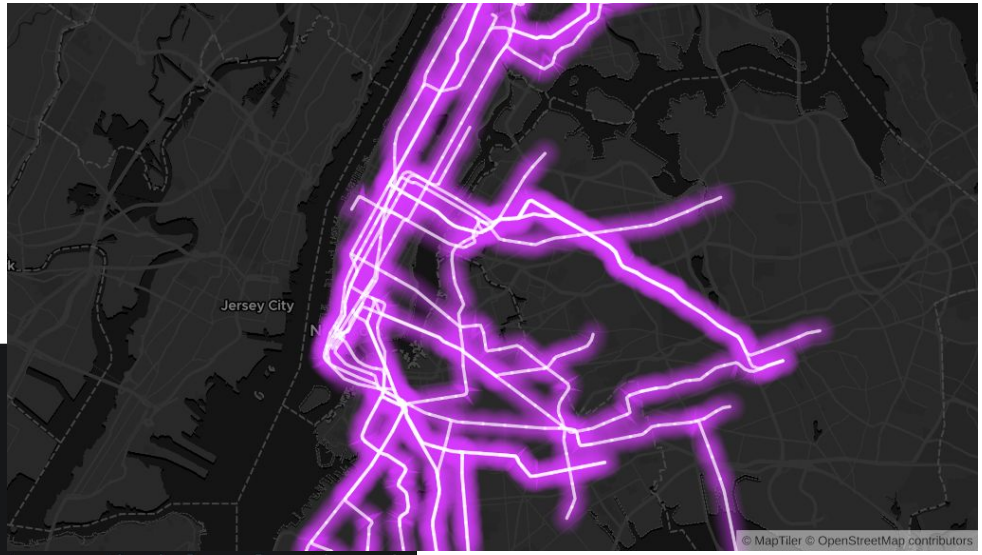
MapLibre

```
map.addSource('earthquakes', {
  'type': 'geojson',
  'data': 'earthquakes.geojson',
  cluster: true,
  clusterMaxZoom: 14,
  clusterRadius: 50
});

map.addLayer({
  id: 'clusters',
  type: 'circle',
  source: 'earthquakes',
  filter: ['has', 'point_count'],
  paint: {
    'circle-color': [
      'step',
      ['get', 'point_count'],
      '#51bbd6',
      100,
      '#f1f075',
      750,
      '#f28cb1'
    ],
    'circle-radius': [
      'step',
      ['get', 'point_count'],
      20,
      100,
      30,
      750,
      40
    ]
  }
});

map.addLayer({
  id: 'cluster-count',
  type: 'symbol',
  source: 'earthquakes',
  filter: ['has', 'point_count'],
  layout: {
    'text-field': '{point_count_abbreviated}',
    'text-font': ['DIN Offc Pro Medium'],
    'text-size': 12
  }
});

map.addLayer({
  id: 'unclustered-point',
  type: 'circle',
  source: 'earthquakes',
  filter: ['!', ['has', 'point_count']],
  paint: {
    'circle-color': '#11b4da',
    'circle-radius': 4,
    'circle-stroke-width': 1,
    'circle-stroke-color': '#fff'
  }
});
```

MapTiler SDK JS

Layer Helpers Lineas




```
await maptilersdk.helpers.addPolyline(map, {
  data: 'YOUR_MAPTILER_DATASET_ID_HERE',
  // --> Main line
  lineColor: "#fff",        // White
  lineOpacity: 0.7,         // Partially transparent to see the halo color through

  // --> Halo line
  outline: true,            // To create the electric halo, the outline is
  outlineColor: "#d83bff", // purple
  outlineOpacity: 0.5,      // half transparent
  outlineWidth: 15,         // quite large compared to the main line
  outlineBlur: 15,          // and blurry
});
```

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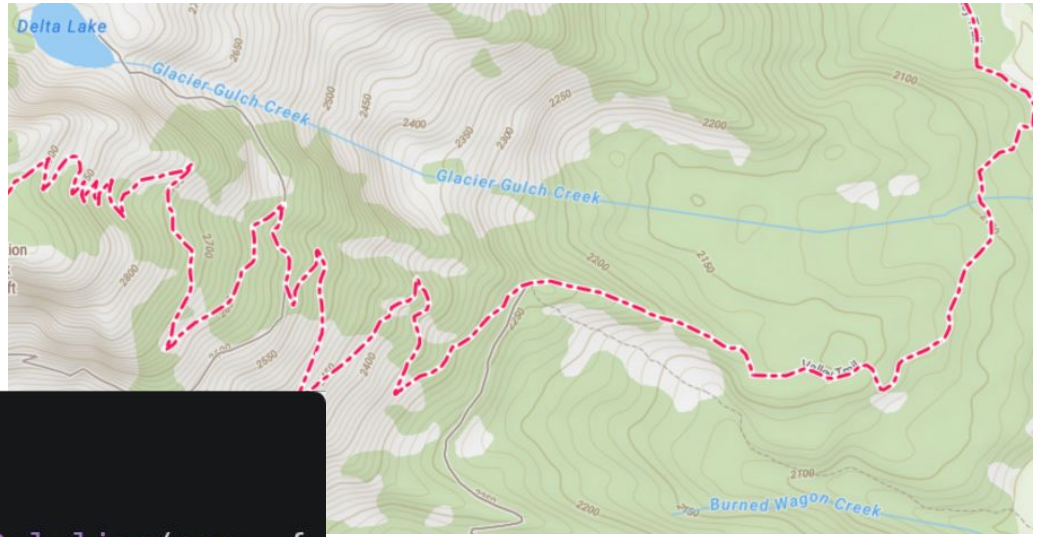
https://docs.maptiler.com/sdk-js/api/helpers/

MapTiler SDK JS

Layer Helpers Lineas




```
await maptilersdk.helpers.addPolyline(map, {
  data: 'YOUR_MAPTILER_DATASET_ID_HERE',
  outline: true,
  lineDashArray: "___  _  ", //or [3,2,1,2]
  lineColor: "#F1175D"
});
```

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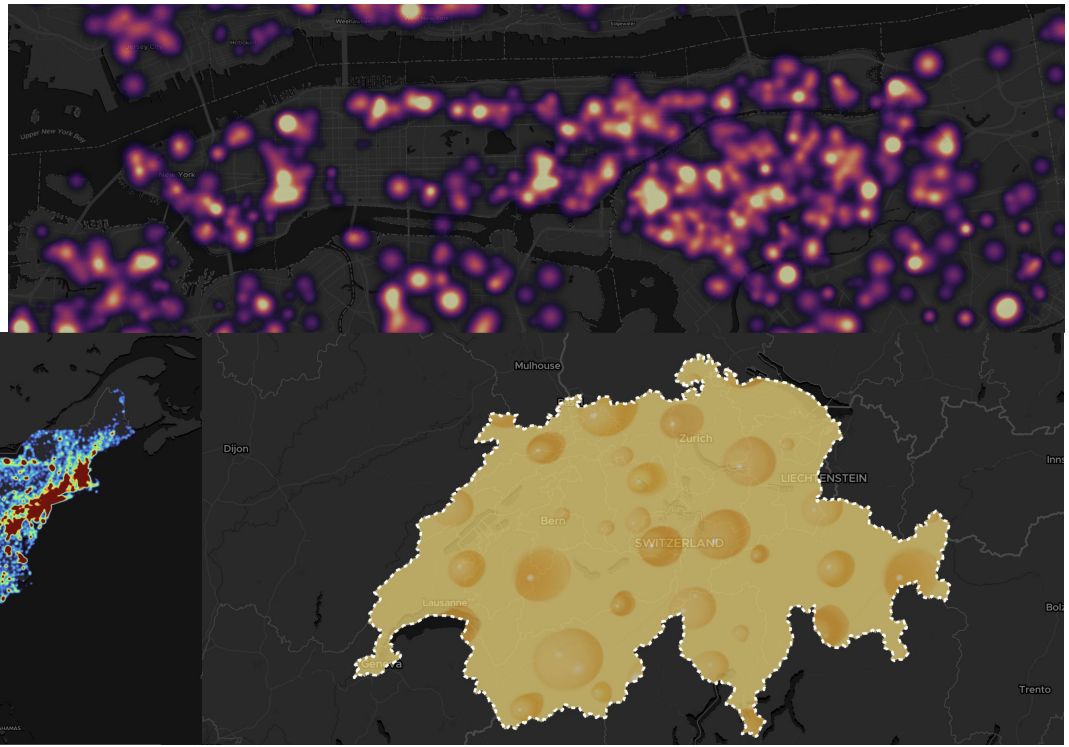
https://docs.maptiler.com/sdk-js/api/helpers/

MapTiler SDK JS

Layer Helpers: Polígonos, Heatmaps



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https://docs.maptiler.com/sdk-js/api/helpers/

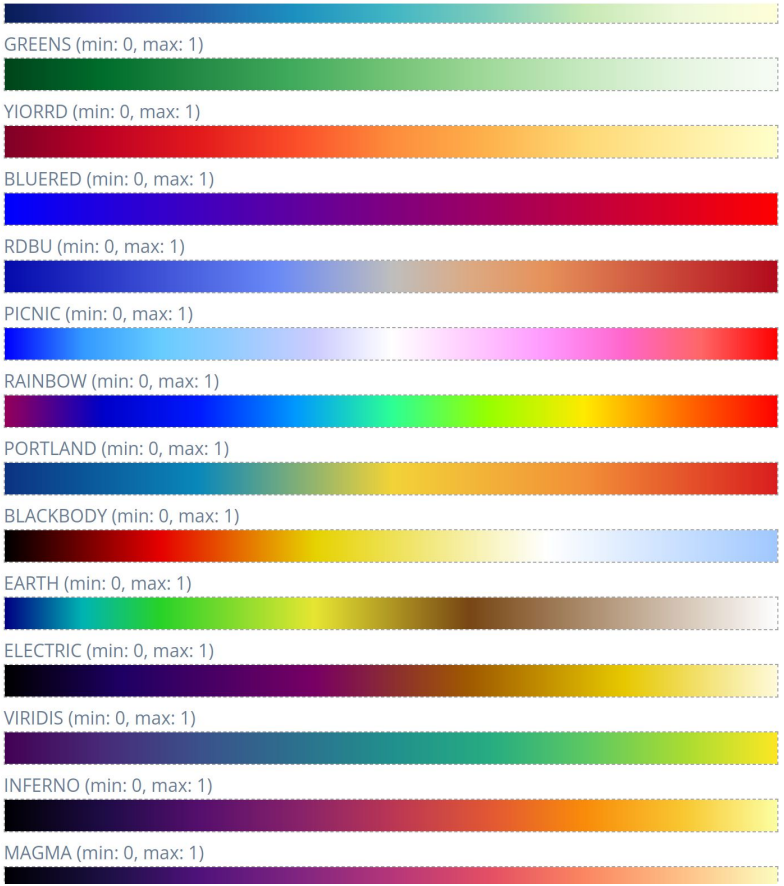
MapTiler SDK JS

Color ramps

```
import { ColorRamp, ColorRampCollection} from "@maptiler/sdk";

//use a built-in color ramp
ColorRampCollection.WARM

const myCustomRamp = new ColorRamp({
  stops: [
    { value: 0, color: [68, 1, 84] },
    { value: 13, color: [71, 44, 122] },
    { value: 25, color: [59, 81, 139] },
    { value: 38, color: [44, 113, 142] },
    { value: 5, color: [33, 144, 141] },
    { value: 63, color: [39, 173, 129] },
    { value: 75, color: [92, 200, 99] },
    { value: 88, color: [170, 220, 50] },
    { value: 100, color: [253, 231, 37] },
  ]
});
```



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https://docs.maptiler.com/sdk-js/api/color-ramp/

MapTiler SDK JS

Módulos externos

Estamos construyendo un ecosistema alrededor de MapTiler Cloud y MapTiler SDK

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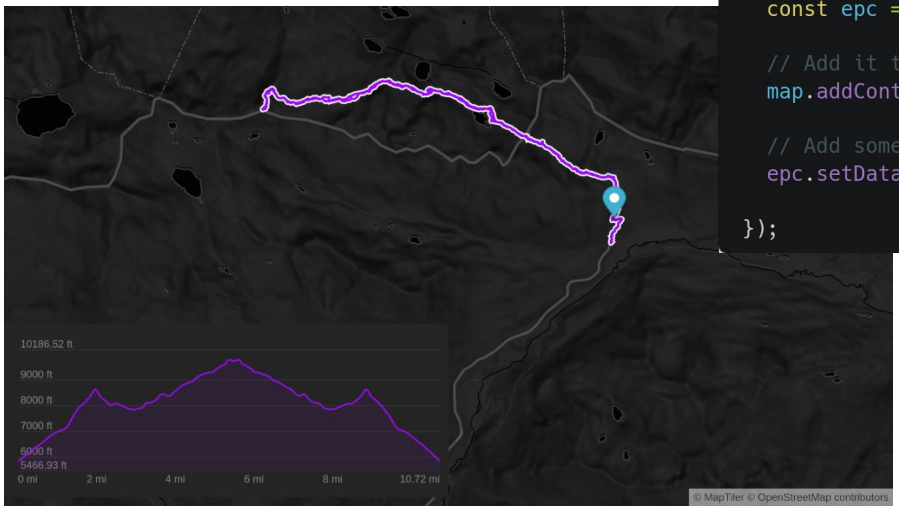
https://docs.maptiler.com/sdk-js/modules/

MapTiler SDK JS

Profile control




```
import { ElevationProfileControl } from "@maptiler/elevation-profile-control";

map.on('load', () => {

  // Create an instance (with no options)
  const epc = new ElevationProfileControl();

  // Add it to your map
  map.addControl(epc);

  // Add some data (from a URL or a MapTiler Data UUID)
  epc.setData('YOUR_MAPTILER_DATASET_ID_HERE');

});
```

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https://docs.maptiler.com/sdk-js/modules/elevation-profile/

maptiler GEOCODING CONTROL

MapTiler SDK JS

Geocoding control

SVELTE

maptiler SDK JS

MapLibre

```
import { GeocodingControl } from "@maptiler/geocoding-control/maptilersdk";

const gc = new GeocodingControl({});

map.addControl(gc);
```

JS

Leaflet

React

OpenLayers

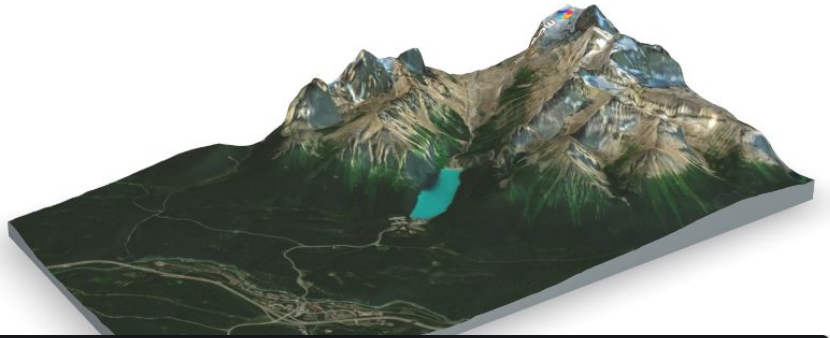
maptiler

https://docs.maptiler.com/sdk-js/modules/geocoding/

maptiler AR CONTROL

MapTiler SDK JS

AR control 🔒



```
import {MaptilerARControl} from "@maptiler/ar-control";

map.on('load', function () {
  // Creating the control
  const arControl = new MaptilerARControl();

  // Adding the AR control on the top-left corner of the map
  map.addControl(arControl, "top-left");
});
```

maptiler

https://docs.maptiler.com/sdk-js/modules/ar/

maptiler WEATHER JS

MapTiler SDK JS

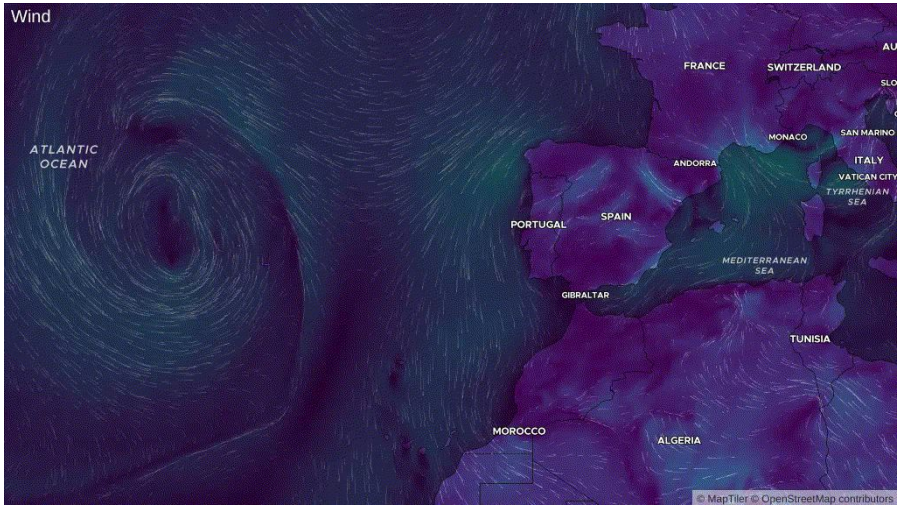
Weather JS 🔒

Module Reference

- Precipitation layer
- Pressure layer
- Radar layer
- Temperature layer
- Wind layer
- Layers methods
- Layers events
- Color ramp
- Pressure isolines (plus)
- Wind arrow (plus)

Low-level Reference

- Intesity layer
- ColoringFragment
- Particle layer
- Arrow layer (plus)
- Isolines layer (plus)
- Types and interfaces




```
import { WindLayer } from "@maptiler/weather";
const windLayer = new WindLayer();
```

maptiler

https://docs.maptiler.com/sdk-js/modules/weather/

MapTiler SDK JS + Leaflet

Leaflet JS con Vector Tiles

- Mapas base de vector tiles multilingües para Leaflet utilizando el SDK de MapTiler.
- Capas de vector tiles (data overlay) en tus aplicaciones sin ningún tipo de limitación (mostrar millones de geometrías, mapas de coropletas, etc).
- Cambiar fácilmente el idioma del mapa sin tener que crear un nuevo mapa base.
- Utiliza cualquiera de los mapas base creados por MapTiler o utiliza un mapa base personalizado.

```
// Import the Leaflet MapTiler Plugin
import "@maptiler/leaflet-maptilersdk";

const map = L.map('map', {
  center: L.latLng(49.2125578, 16.62662018),
  zoom: 14,
});

// Create a MapTiler Layer inside Leaflet
const mtLayer = new L.MaptilerLayer({
  // Get your free API key at https://cloud.maptiler.com
  apiKey: "YOUR_MAPTILER_API_KEY_HERE",
}).addTo(map);
```

maptiler

https://docs.maptiler.com/leaflet/examples/vector-tiles-in-leaflet-js/

MapTiler SDK JS

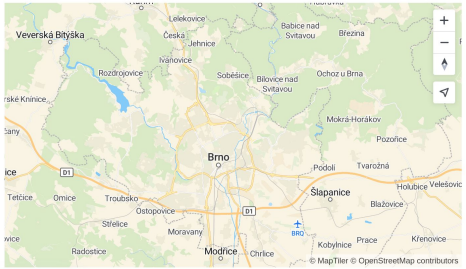
Documentación

Examples
Explore our code samples collection.
EXPLORE THE EXAMPLES

SDK JS Reference
Read the SDK API Reference.
READ DOCUMENTATION

Get started integrating maps

Simply use the code below the map.



Video tutorials

More video tutorials

JS Frameworks

- Angular
- React
- Svelte
- Vue.js
- Vite

Add custom icon (SVG) to a point layer

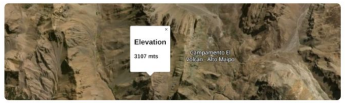
Example

This example shows how to make a map with pins to display a point layer from a MapTiler Cloud Tileset using a custom SVG icon.

Display GPX track elevation profile

Example

The elevation profile control for MapTiler SDK is a super easy way to show the elevation profile of any GPX track, with elevation data fueled by MapTiler Cloud.



Elevation at point

Example

How to get the elevation in meters from any location.

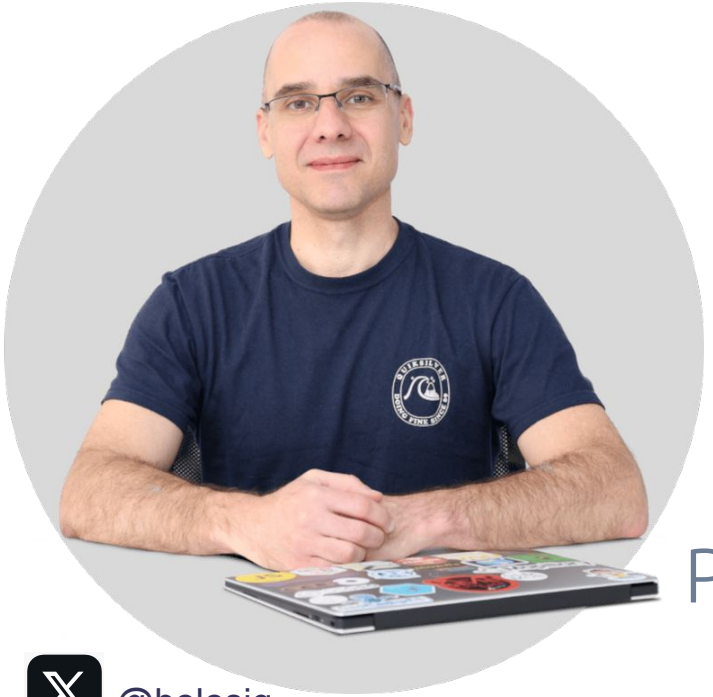
Map view URL hash

Example

Share and retrieve a particular map view by simply copying and pasting the URL. Maintain the map view in the URL hash.

maptiler

https://docs.maptiler.com/sdk-js/



Gracias!

Preguntas?

@bolosig

bolosig

maptiler

https://github.com/maptiler