

Web Картографија

OpenLayers3 - 2.

Доц. др Милан Килибарда

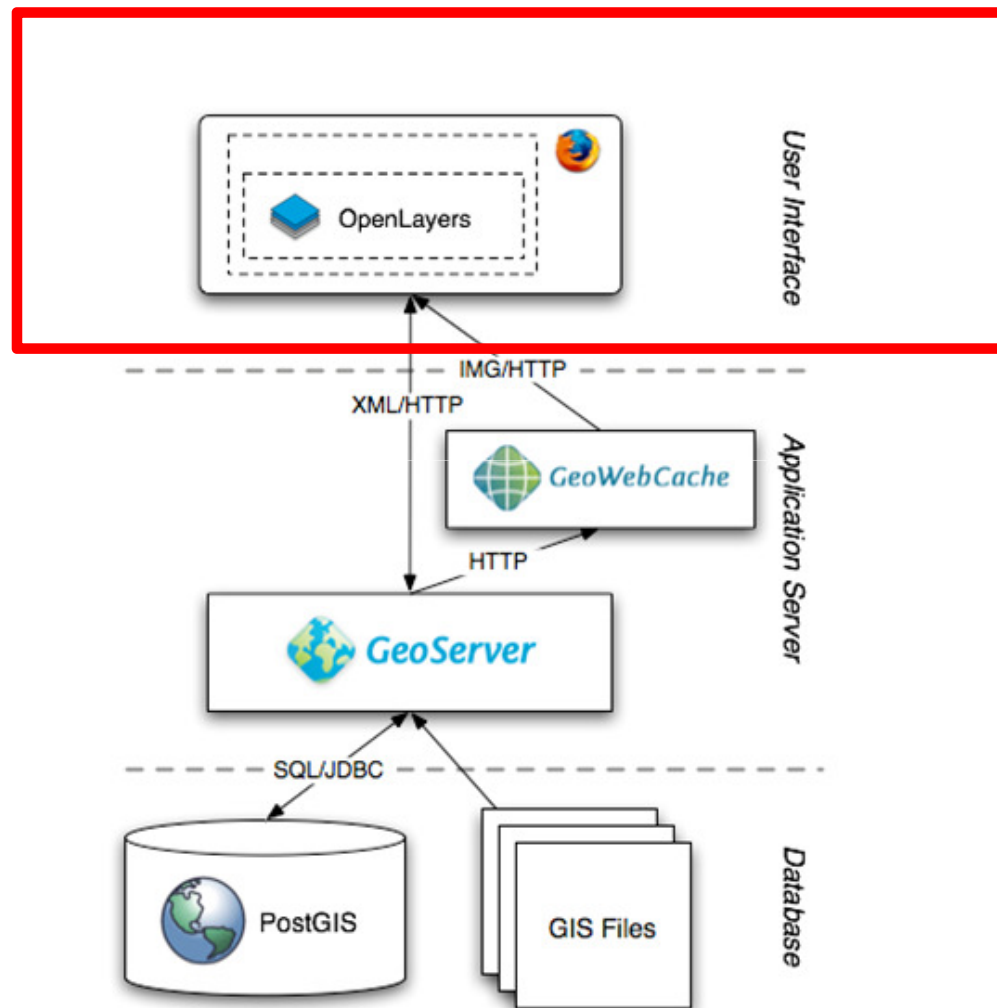
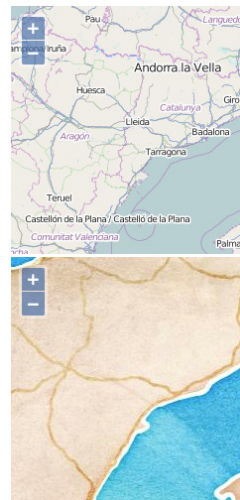
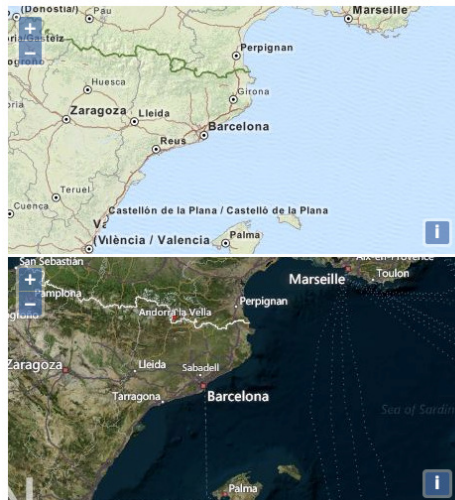
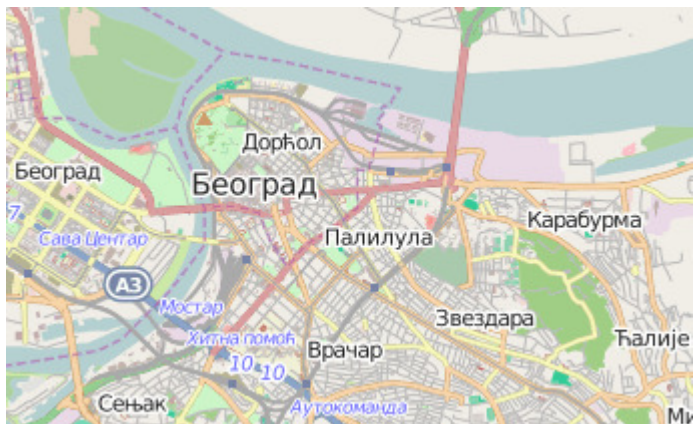
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OpenLayers wiki

"OpenLayers is an open source (provided under the 2-clause BSD License[2]) JavaScript library for displaying map data in web browsers. It provides an API for building rich web-based geographic applications similar to Google Maps and Bing Maps. The library was originally based on the Prototype JavaScript Framework."

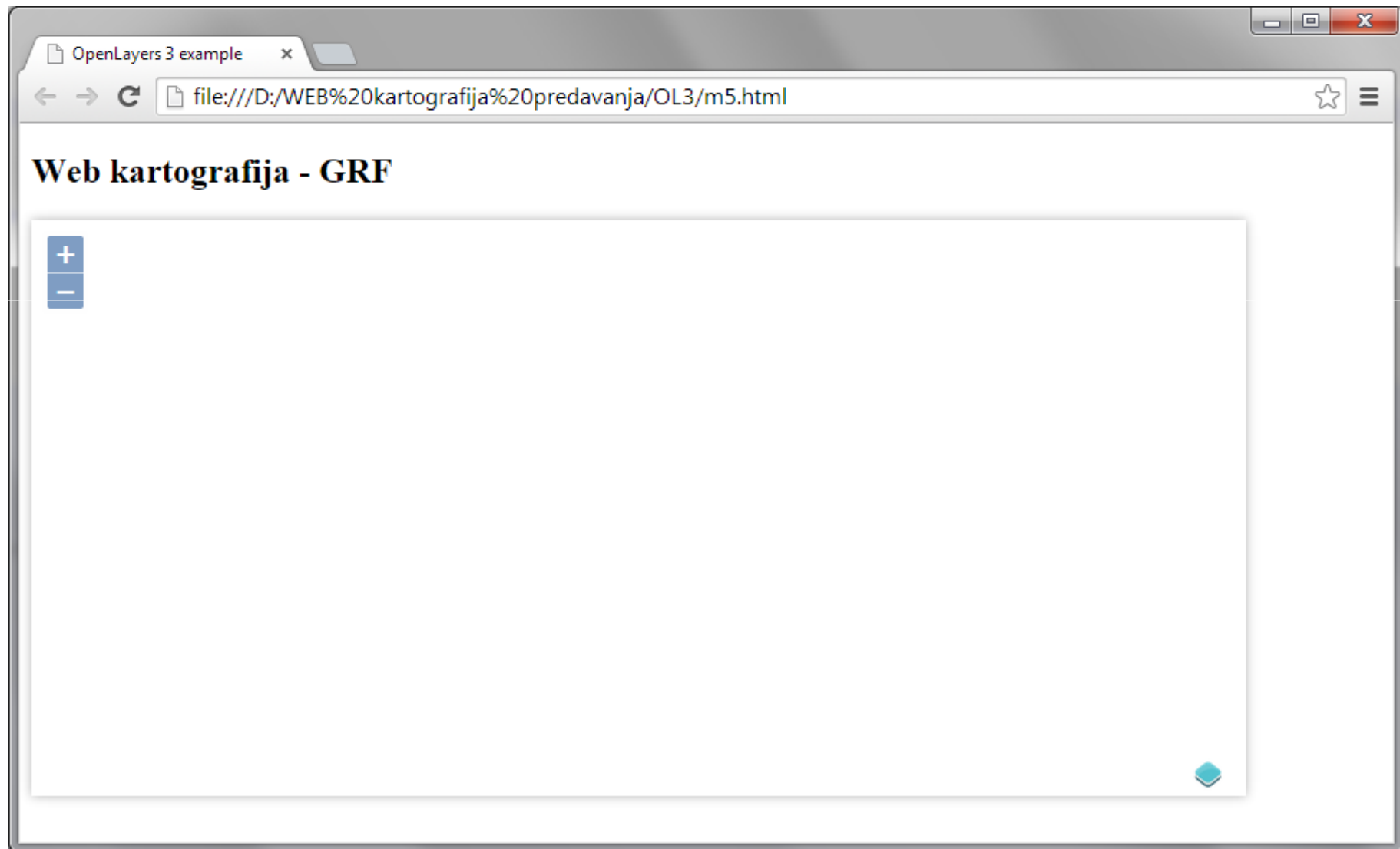
Садржај



OL3 - Layers

```
<script type="text/javascript">
  var map = new ol.Map({
    target: 'map',
    layers: [
      // Karta bez lejera
    ],
    view: new ol.View({
      center: ol.proj.transform([ 20.492420,
44.798095], 'EPSG:4326', 'EPSG:3857'),
      zoom: 10
    })
  });
</script>
```

layers[]

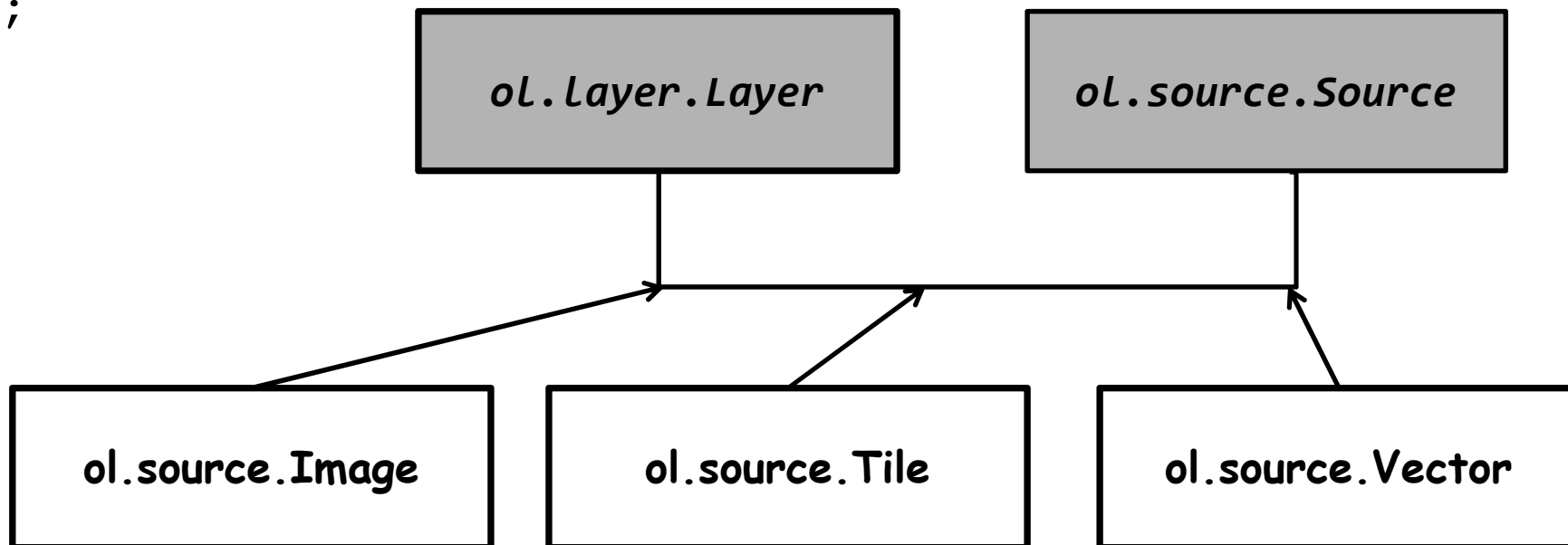


Лејери у OL3

Пример:

```
var MQ = new ol.layer.Tile({  
  source: new ol.source.MapQuest({  
    layer: 'sat'  
  })  
});
```

**Апстрактана
класа**



ol.source

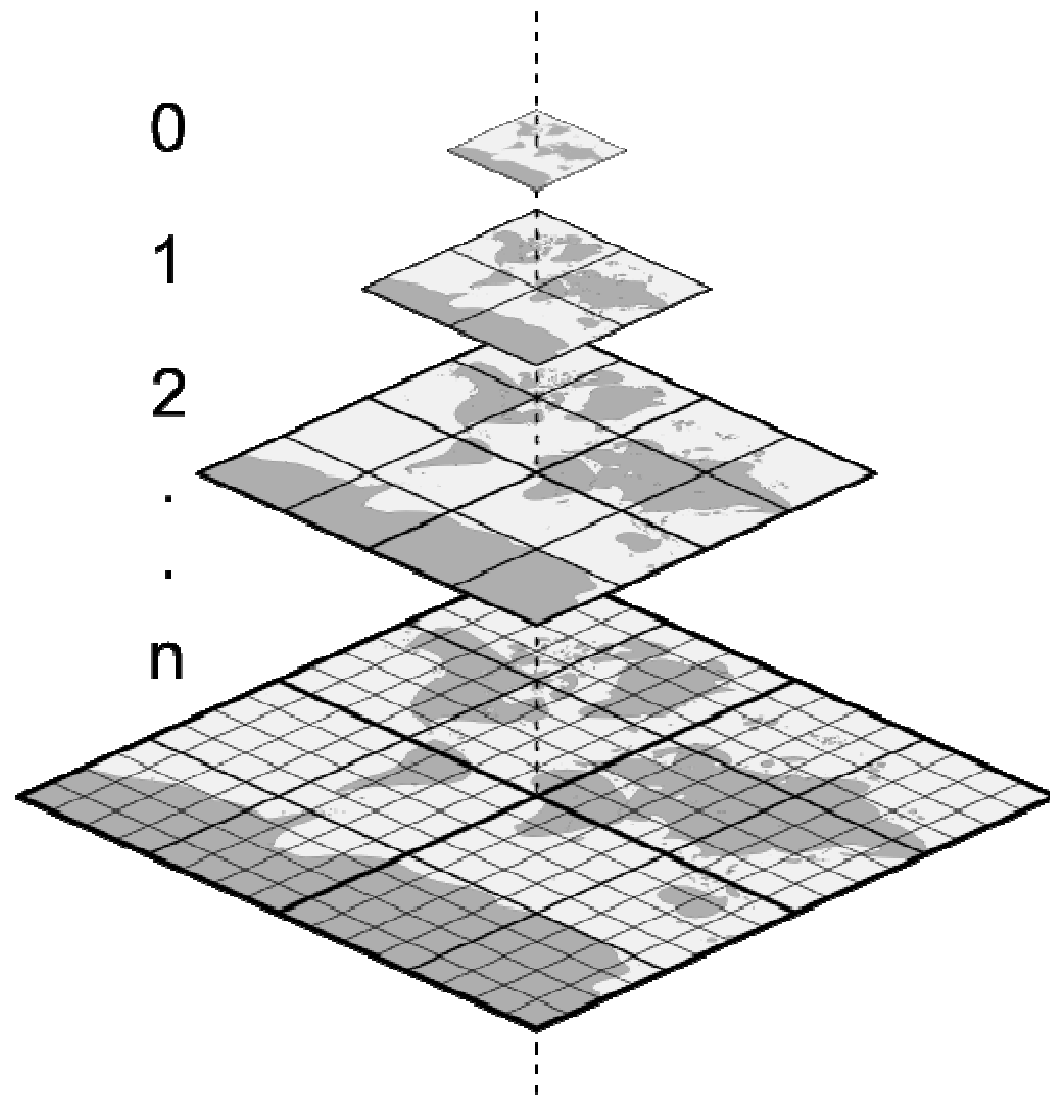
ol.source.Image

ol.source.Tile

ol.source.Vector

BingMaps, Cluster, FormatVector, GeoJSON, GPX, IGC, **Image**, ImageCanvas, ImageMapGuide, **ImageStatic**, ImageVector, ImageWMS, KML, **MapQuest**, **OSM**, OSMXML, ServerVector, Source, Stamen, StaticVector, Tile, TileDebug, TileImage, TileJSON, TileVector, **TileWMS**, TopoJSON, **Vector**, VectorEvent, WMTS, XYZ, Zoomify

ol.layer.Tile



<http://openlayers.org/en/v3.0.0/apidoc/ol.layer.Tile.html>

Name	Type	Description
opacity	number undefined	Opacity (0, 1). Default is 1.
preload	number undefined	Preload. Load low-resolution tiles up to preload levels. By default preload is 0, which means no preloading.
source	ol.source.Source	Source for this layer.
visible	boolean undefined	Visibility. Default is true (visible).
extent	ol.Extent undefined	The bounding extent for layer rendering. The layer will not be rendered outside of this extent.
minResolution	number undefined	The minimum resolution (inclusive) at which this layer will be visible.
maxResolution	number undefined	The maximum resolution (exclusive) below which this layer will be visible.
useInterimTilesOnError	boolean undefined	Use interim tiles on error. Default is true.

map.addLayer

```
var MQ = new ol.layer.Tile({  
    source: new ol.source.MapQuest({  
        layer: 'sat'  
    })  
});
```

```
map.addLayer(MQ)
```

Могући лејери

layer: 'sat' или 'hyb' или 'osm'

<http://openlayers.org/en/master/apidoc/ol.source.MapQuest.html>

map.addLayer(MQ)



map.addLayer

```
var MQ = new ol.layer.Tile({  
    source: new ol.source.MapQuest ({  
        layer: 'sat'  
    })  
});
```

```
var OSM = new ol.layer.Tile({  
    source: new ol.source.OSM()  
});
```

```
map.addLayer(MQ)  
map.addLayer(OSM)
```

map.addLayer

```
var MQ = new ol.layer.Tile({  
    source: new ol.source.MapQuest({  
        layer: 'sat'  
    })  
});
```

```
var OSM = new ol.layer.Tile({  
    source: new ol.source.OSM(),  
    opacity: 0.5  
});
```

```
map.addLayer(MQ)  
map.addLayer(OSM)
```

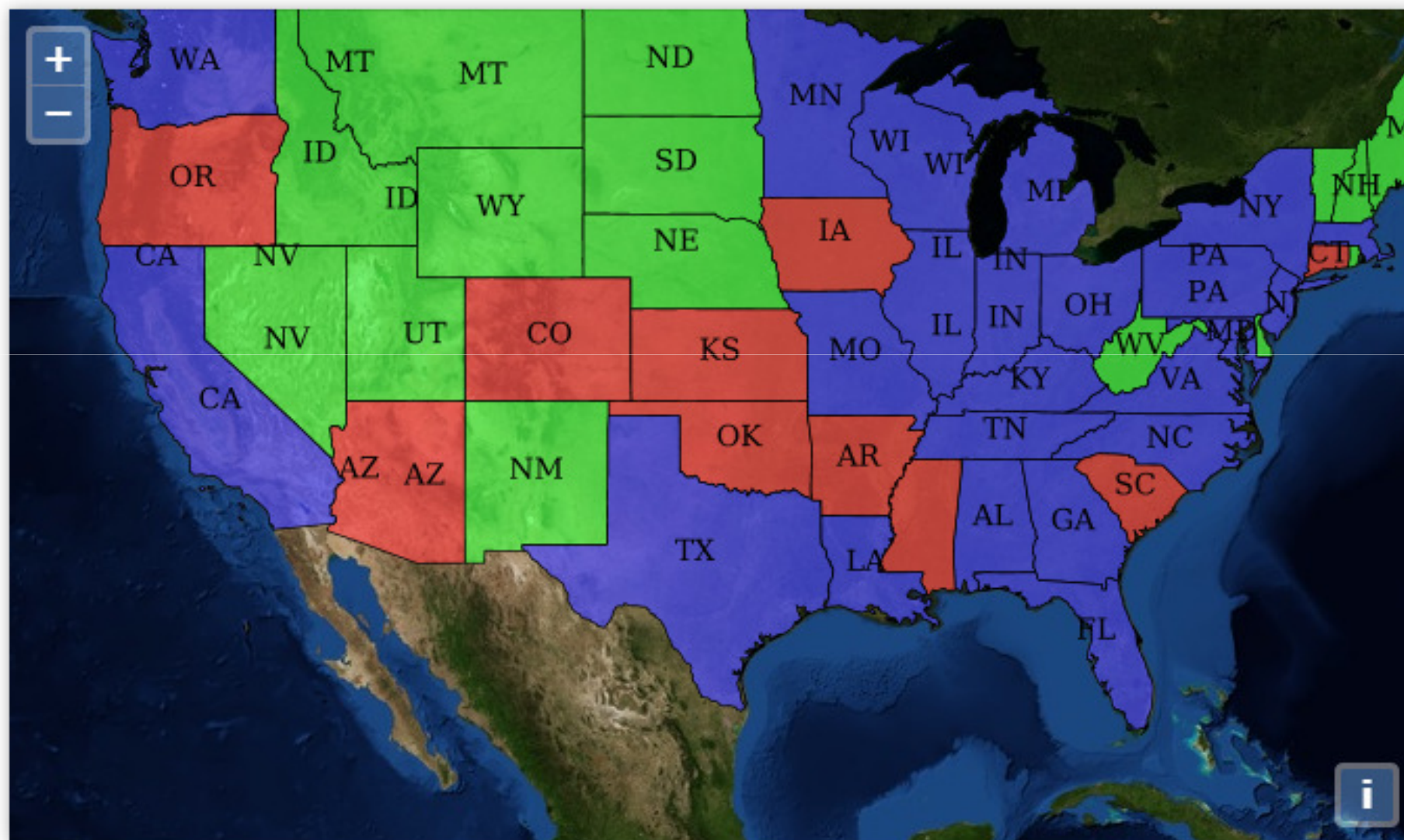
<http://openlayers.org/en/master/apidoc/ol.source.TileWMS.html>

Name	Type	Description
attributions	Array.< ol.Attribution > undefined	Attributions.
params	Object.<string, *>	WMS request parameters. At least a LAYERS param is required. STYLES is '' by default. VERSION is 1.3.0 by default. WIDTH, HEIGHT, BBOX and CRS (SRS for WMS version < 1.3.0) will be set dynamically.
crossOrigin	null string undefined	The crossOrigin attribute for loaded images. Note that you must provide a crossOrigin value if you are using the WebGL renderer or if you want to access pixel data with the Canvas renderer. See https://developer.mozilla.org/en-US/docs/Web/HTML/CORS_enabled_image for more detail.
gutter	number undefined	The size in pixels of the gutter around image tiles to ignore. By setting this property to a non-zero value, images will be requested that are wider and taller than the tile size by a value of 2 x gutter. Defaults to zero. Using a non-zero value allows artifacts of rendering at tile edges to be ignored. If you control the WMS service it is recommended to address "artifacts at tile edges" issues by properly configuring the WMS service. For example, MapServer has a tile_map_edge_buffer configuration parameter for this. See http://mapserver.org/output/tile_mode.html .
logo	string olx.LogoOptions undefined	Logo.
tileGrid	ol.tilegrid.TileGrid undefined	Tile grid. Base this on the resolutions, tileSize and extent supported by the server. If this is not defined, a default grid will be used: if there is a projection extent, the grid will be based on that; if not, a grid based on a global extent with origin at 0,0 will be used.
url	string undefined	WMS service URL.
urls	Array.<string> undefined	WMS service urls. Use this instead of url when the WMS supports multiple urls for GetMap requests.

ol.source.TileWMS

```
var layers = [  
  new ol.layer.Tile({  
    source: new ol.source.MapQuest({layer: 'sat'})  
  }),  
  
  new ol.layer.Tile({  
    extent: [-13884991, 2870341, -7455066, 6338219],  
    source: new ol.source.TileWMS(** @type {olx.source.TileWMSOptions} */  
(  
    url: 'http://demo.opengeo.org/geoserver/wms',  
    params: {'LAYERS': 'topp:states', 'TILED': true},  
    serverType: 'geoserver'  
  )))  
];  
var map = new ol.Map({  
  layers: layers,  
  target: 'map',  
  view: new ol.View({  
    center: [-10997148, 4569099],  
    zoom: 4  
  })  
});
```

Web kartografija - GRF



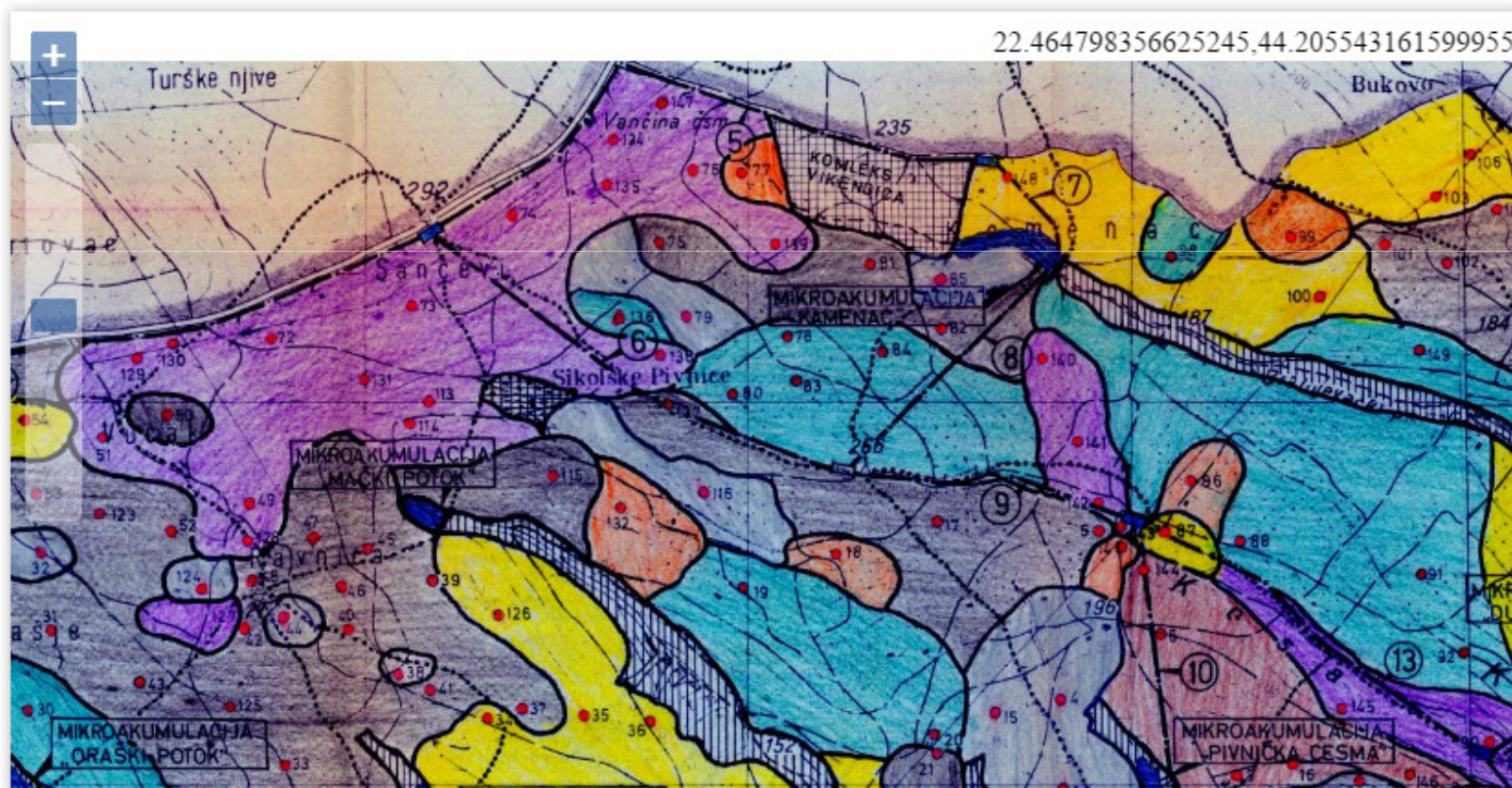
ol.layer.Image

Name	Type	Description
opacity	number undefined	Opacity (0, 1). Default is 1.
source	ol.source.Image	Source for this layer.
visible	boolean undefined	Visibility. Default is true (visible).
extent	ol.Extent undefined	The bounding extent for layer rendering. The layer will not be rendered outside of this extent.
minResolution	number undefined	The minimum resolution (inclusive) at which this layer will be visible.
maxResolution	number undefined	The maximum resolution (exclusive) below which this layer will be visible.

ol.layer.Image

```
var map = new ol.Map({
  controls: [new ol.control.ZoomSlider(),
             new ol.control.MousePosition(),
             new ol.control.Zoom()],
  layers: [
    new ol.layer.Image({
      opacity: 1,
      source: new ol.source.ImageStatic({
        url: 'topomap.jpg',
        imageSize: [2181, 1051],
        projection: 'EPSG:4326',
        imageExtent: [22.43338, 44.18799, 22.51490, 44.21614]
      })
    })
  ],
  target: 'map',
  view: new ol.View({
    projection: 'EPSG:4326',
    center: [22.475527, 44.204096],
    zoom: 15
  })
});
```

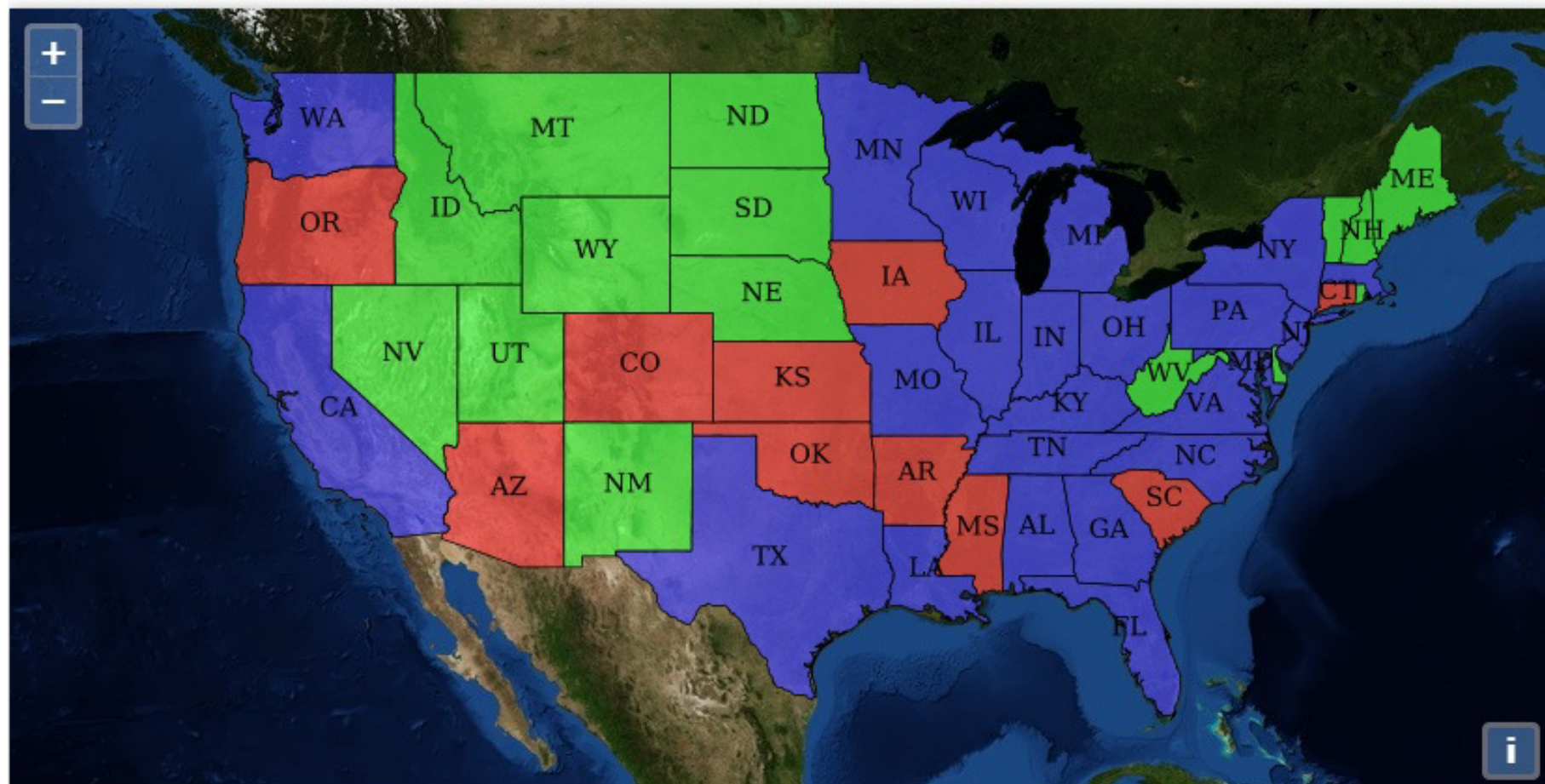
Web kartografija - GRF



ol.source.ImageWMS

```
var layers = [  
  new ol.layer.Tile({  
    source: new ol.source.MapQuest({layer: 'sat'})  
  }),  
  new ol.layer.Image({  
    extent: [-13884991, 2870341, -7455066, 6338219],  
    source: new ol.source.ImageWMS({  
      url: 'http://demo.opengeo.org/geoserver/wms',  
      params: {'LAYERS': 'topp:states'},  
      serverType: 'geoserver'  
    })  
  })  
];  
var map = new ol.Map({  
  layers: layers,  
  target: 'map',  
  view: new ol.View({  
    center: [-10997148, 4569099],  
    zoom: 4  
  })  
});
```

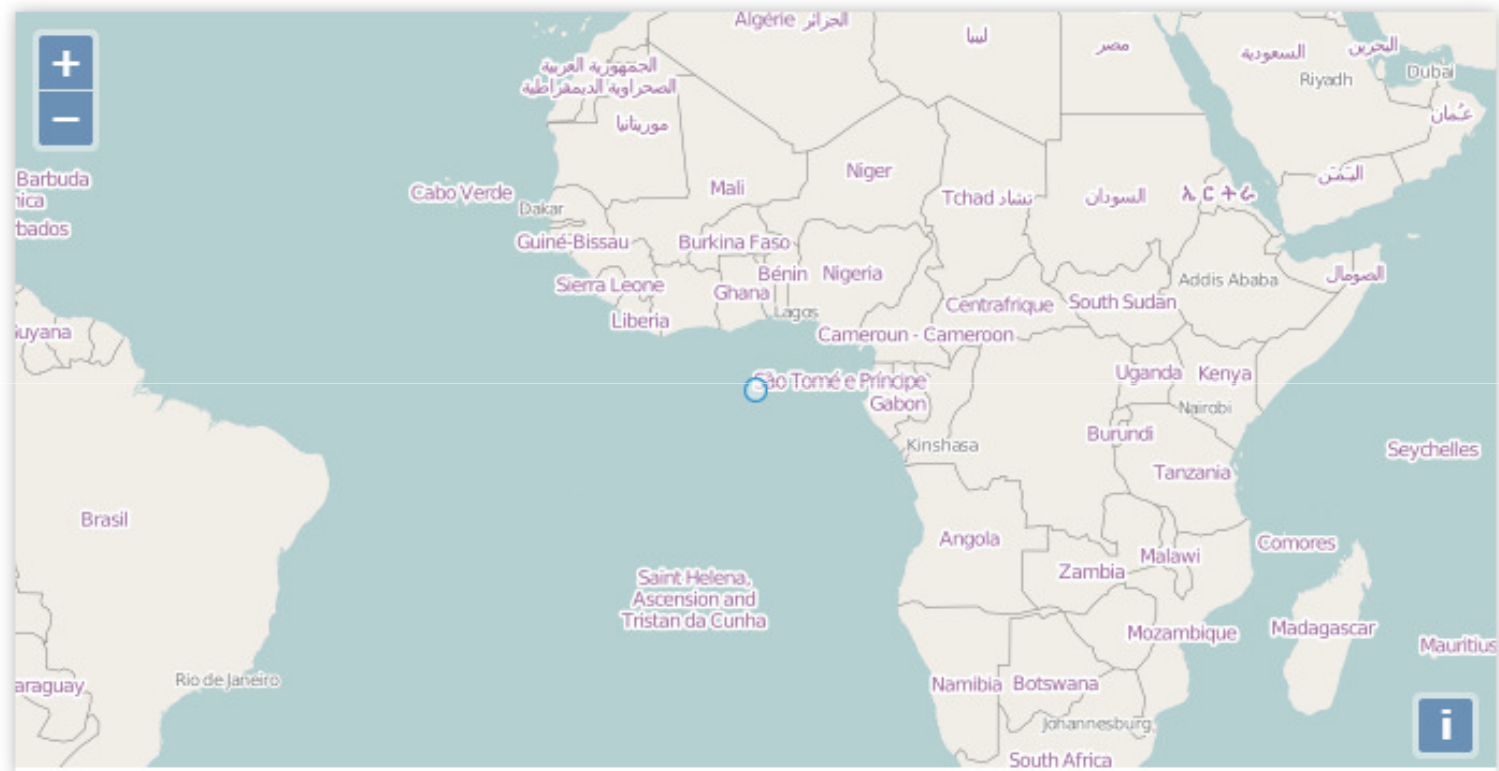
Web kartografija - GRF



ol.layer.Vector

```
var point = new ol.Feature({
  geometry: new ol.geom.Point([0, 0]),
  name: 'Null Island',
  population: 4000,
  rainfall: 500
});
var vectorSource = new ol.source.Vector({
  features: [point]
});
var vectorLayer = new ol.layer.Vector({
  source: vectorSource
});
var map = new ol.Map({
  layers: [
    new ol.layer.Tile({
      source: new ol.source.OSM()
    }),
    vectorLayer
  ],
  target: 'map',
  view: new ol.View({
    center: [0, 0],
    zoom: 3
  })
});
```

Web kartografija - GRF



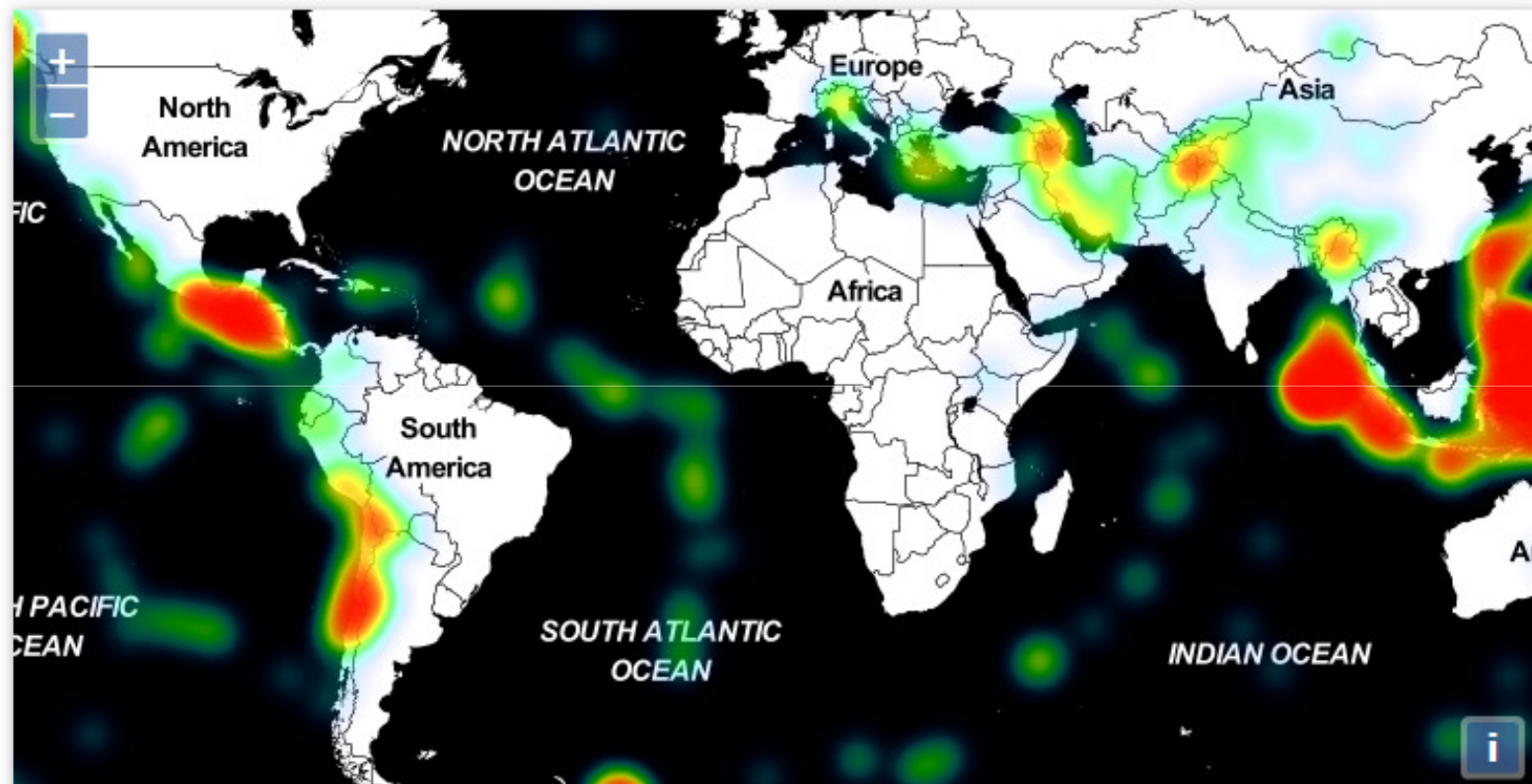
Heatmap layer

- Користи се за као алтернатива пропорционалним симболима.
- Интезитет промељиве је корелисан са бојом (као хипсометрија) и величином приказа.
- Векторски подаци имају сличан приказ као растерски.

Heatmap layer

```
var vector = new ol.layer.Heatmap({
  source: new ol.source.KML({
    extractStyles: false,
    projection: 'EPSG:3857',
    url: 'http://ol3js.org/en/master/examples/data/kml/2012_Earthquakes_Mag5.kml'
    //url: '2012_Earthquakes_Mag5.kml'
  }),
  radius: 5
});
vector.getSource().on('addfeature', function(event) {
  var name = event.feature.get('name');
  var magnitude = parseFloat(name.substr(2));
  event.feature.set('weight', magnitude - 5);
});
var raster = new ol.layer.Tile({
  source: new ol.source.Stamen({
    layer: 'toner'
  })
});
var map = new ol.Map({
  layers: [raster, vector],
  target: 'map',
  view: new ol.View({
    center: [0, 0],
    zoom: 2
  })
});
```

Web kartografija - GRF



Литература

<http://openlayers.org/dev/examples>

<http://docs.openlayers.org/>

