



# Copernicus webapp

CLIENT-SIDE RASTER VIEWER & CALCULATOR

# Why?

- ▶ Free, full and open access to environmental data
- ▶ Benefits of multispectral images: ANALYSES
- ▶ Lack of quick web viewer & analyzer



# How?

- ▶ MANGOL web mapping GUI framework
  - ▶ Angular2 + OpenLayers3
  - ▶ TypeScript, SCSS
  - ▶ Responsible
  - ▶ Under heavy development...
- ▶ New module: Raster calculator



# Preprocessing

- ▶ 2 single-band raster images for NDVI calculations
- ▶ Put in GeoServer as GeoTiff store, create WMS service
- ▶ Problem:
  - ▶ Data is not normalized
  - ▶ Image painted on canvas (OL3) is RGB
  - ▶ Different brightness with different zoom levels: not representing real values!
  - ▶ Normalizing was necessary (0-255)



# Development

- ▶ New module: Raster calculator
- ▶ ol.source.Raster is awesome!
- ▶ Only one calculation so far: NDVI index (Normalized Difference Vegetation Index)

$$\left( \begin{array}{c} \text{Near} \\ \text{IR} \end{array} \text{ minus } \begin{array}{c} \text{Red} \\ \text{Green} \\ \text{Blue} \end{array} \right)$$

-----divided by-----

$$\left( \begin{array}{c} \text{Near} \\ \text{IR} \end{array} \text{ plus } \begin{array}{c} \text{Red} \\ \text{Green} \\ \text{Blue} \end{array} \right)$$

What is  
NDVI?

Simple  
answer:  
health of  
vegetation

# Results



# Future

- ▶ Add more data
- ▶ Add more calculations
- ▶ Some debugging (Firefox issue)