

# H5Web

HDF5 web viewer & data visualization library

https://github.com/silx-kit/h5web

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This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 823852

## **Overview**

- Based on React
- Two NPM packages:
- <u>@h5web/lib</u>, the data visualisation library
- <u>@h5web/app</u>, the viewer











## @h5web/lib

### Data visualization library

• High-level components (heatmap, line, etc.) for use in existing React apps:





- GPU rendering with WebGL (via ThreeJS and react-three-fiber)
- Low-level components (canvas, zoom, etc.) for advanced use cases





## @h5web/app

<H5GroveProvider-url={URL} filepath={filepath}> - <App /> </H5GroveProvider>

### Web viewer

- Viewer component (<App />) + data providers (e.g. <H5GroveProvider />) to interface with back-end solutions for serving HDF5 files
- Flexible deployment options: stand-alone web app, integration into existing app, <u>JupyterLab extension</u>, etc.



## **H5Grove**

Python utilities for serving HDF5 data/metadata

- Challenges:
  - Serving **very large datasets** and HDF5 file structures efficiently through the web
  - Dealing with **compressed** datasets, **external links** (pointing to datasets in other files), etc.
- How H5Grove helps:
  - $\circ~$  h5py to read HDF5 files
  - hdf5plugin to deal with compressed datasets
  - **Binary encoding** for efficient data transfers
  - External links resolution
  - **Flexible architecture** *not* tied to a specifc Python web frameworks (Flask, Tornado, etc.) ... but helpers available for these frameworks





## Demo

#### Demos

- o Public demo: <u>https://h5web.panosc.eu/</u>
- JupyterLab extension (jupyter-slurm @ ESRF)
- Browse structure and inspect metadata
- Visualize datasets as matrix, line plot, and heatmap
- Slice through nD datasets
- Change colour map, axes scales, etc.
- Visualize NeXus plots (default plot, axis labels, auxiliary signals, etc.)



