Latest developments in data visualization in the web with H5Web

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H5Web is a web-based viewer for HDF5 files written in React with WebGL visualisations.

It supports the NeXus standard.
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Previous presentations at HUG showed:

- The rationale behind the project
- The JupyterLab extension that brings HDF5 browsing to notebooks
DEMO HIGHLIGHTS

✓ Browsing and inspecting

✓ Displaying nD datasets with **Line**, **Heatmap** and **Scatter** (WebGL-based visualisations with react-three-fiber and visx)

✓ **Visualisation controls**: color map, limits, axis scales, etc.

✓ **Support for NeXus**: default plot, signal interpretation, custom axes, etc.

✓ **Interactions**: Select to zoom, help button, dataset export, tooltip
H5WEB REQUESTS DATA TO A PROVIDER
THE PROVIDER CAN BE

Remote

Remote server

Browser

Personal computer

HSDS

h5grove
THE PROVIDER CAN BE

Remote

Local (JupyterLab extension)
THE PROVIDER CAN BE

Remote

Local (JupyterLab extension)

And now, in the browser thanks to h5wasm!
H5WEB VISUALISATIONS CAN BE REUSED IN OTHER APPLICATIONS

Performant WebGL visualisations are available in a package @h5web/lib

In use at ESRF for

- General purpose data acquisition daiquiri
- Diffraction data acquisition braggy
- In development: tomography reconstruction (big images) Tiled vis prototype
H5WEB CAN BE USED AT SEVERAL LEVELS

- Browse HDF5 data remotely
- Browse HDF5 data locally
- Visualise data in React applications

External developments enhance the project, so if interested get in touch!

→ Discussion on Thursday (room 2, 1:45 p.m.) or h5web@esrf.fr
THANK YOU!

Some links:

- h5web: [https://github.com/silx-kit/h5web](https://github.com/silx-kit/h5web)
- jupyterlab-h5web: [https://github.com/silx-kit/jupyterlab-h5web](https://github.com/silx-kit/jupyterlab-h5web)
- H5Web Component docs: [https://h5web-docs.panosc.eu/](https://h5web-docs.panosc.eu/)
- npm packages: [https://www.npmjs.com/org/h5web](https://www.npmjs.com/org/h5web)

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