



Viewing HDF5/NeXus files in the web with H5Web

Loïc Huder

European Synchrotron Radiation Facility, Grenoble, France



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 8238

WHY A HDF5 WEB VIEWER ?

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now the standard
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data at ESRF

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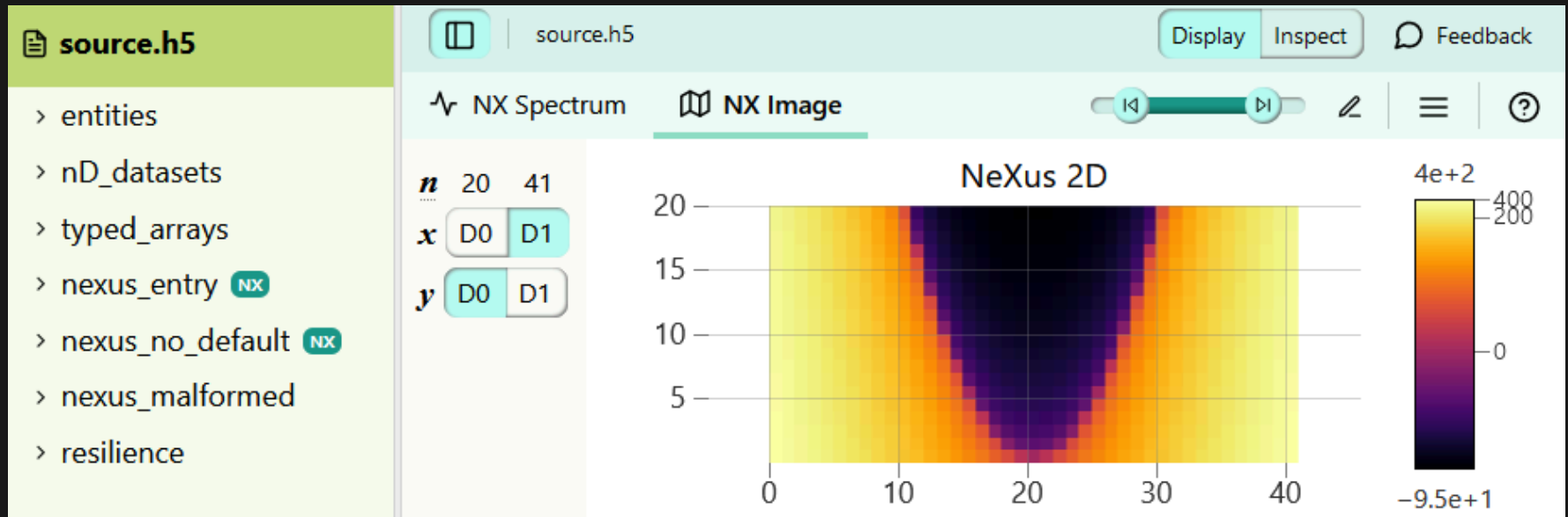
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👉 Need for a software to **efficiently** visualise and
browse HDF5 file contents in the web and to be
flexible for easy integration

HERE COMES H5WEB

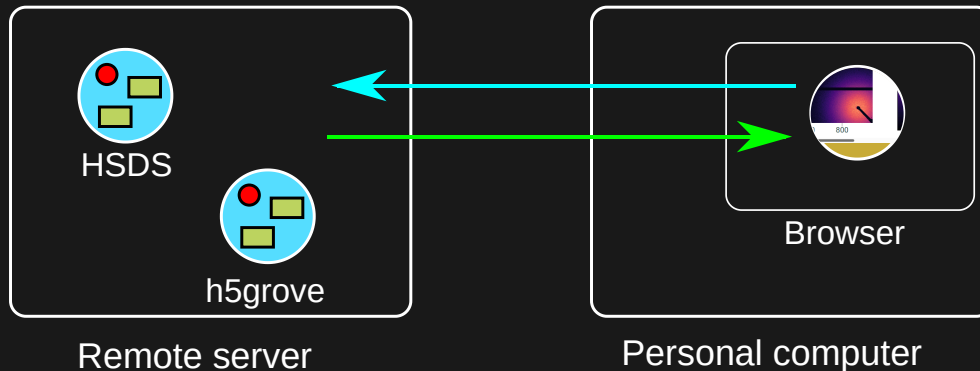
H5Web is a **React app** to view HDF5 files in the web



Efficient visualisations with ThreeJS (3D vis in the web)

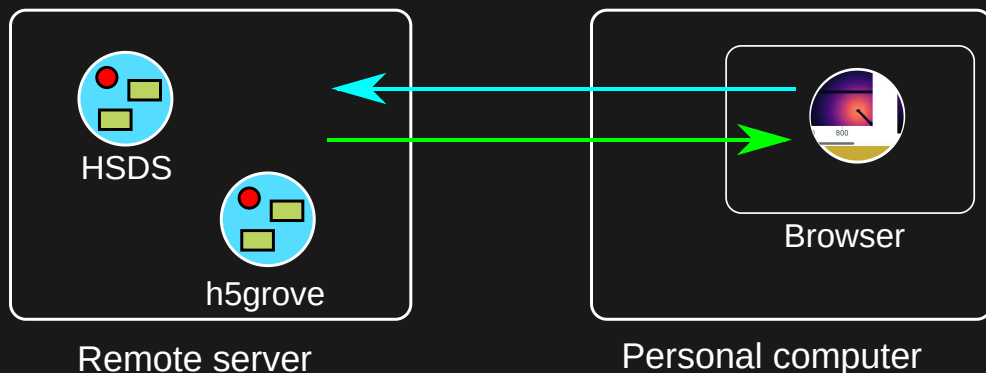
FLEXIBLE WITH REGARD TO FILE LOCATION

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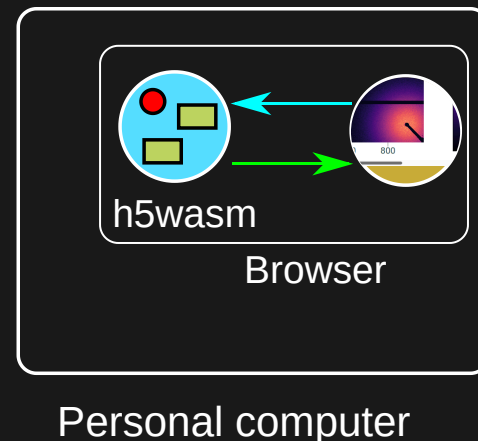


Served by a server
Remote file viewing,
JupyterLab

FLEXIBLE WITH REGARD TO FILE LOCATION

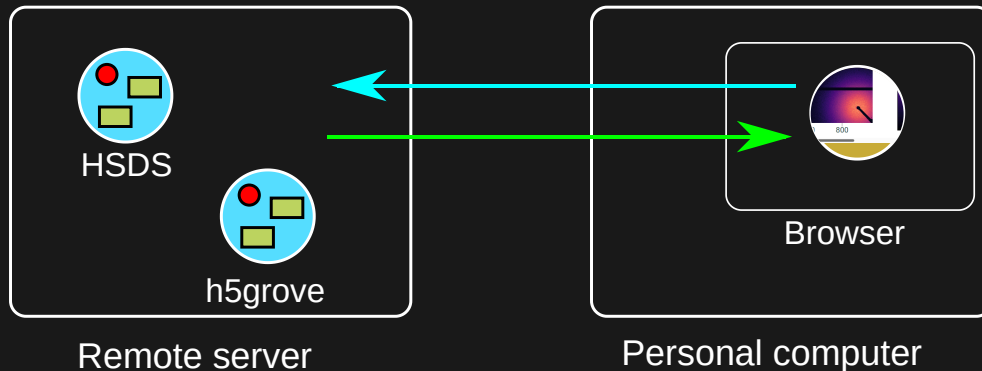


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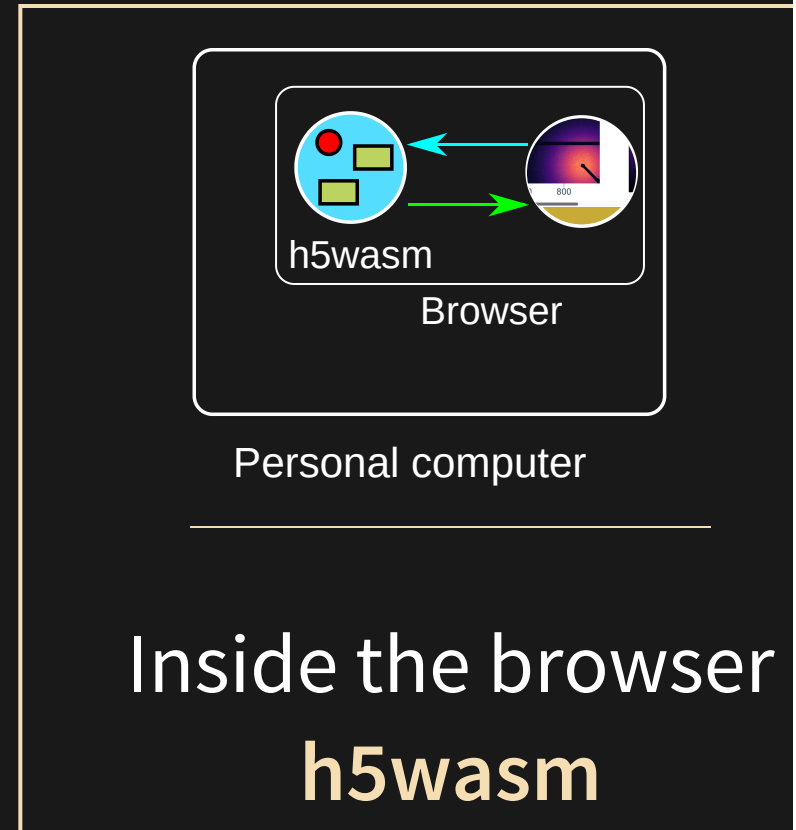


Inside the browser
h5wasm

FLEXIBLE WITH REGARD TO FILE LOCATION



Served by a server
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Inside the browser
h5wasm

FULLY WEB-INTEGRATED VIEWERS WITH H5WEB/H5WASM

myHDF5

MyHDF5

Online HDF5 file
viewer

FULLY WEB-INTEGRATED VIEWERS WITH H5WEB/H5WASM

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VSCoDe-H5Web

View HDF5 files in Visual Studi
Code

FULLY WEB-INTEGRATED VIEWERS WITH H5WEB/H5WASM

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DEMO

DEMO HIGHLIGHTS

- ✓ **Browsing and inspecting metadata**
- ✓ Displaying nD datasets as **Matrix, Line** and **Heatmap**
- ✓ **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, toolt

THERE ARE LIMITATIONS 🙄

- Compressed datasets are unsupported
- File size is limited to 2GB
- External links cannot be resolved

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H5WEB ALSO SUPPORTS HDF5-RELATE DATA FORMATS

NeXus: .nx, .nxs

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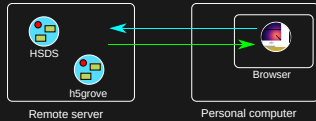
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Julia Data format (JLD2): brought support committed HDF5 datatypes in H5Web/H5Wasm

H5WEB ACCOMMODATES MANY FILE SERVING SCENARIOS



Remote file viewing



JupyterLab

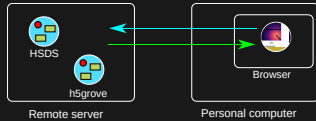


MyHDF5



VSCode-H5Web

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Remote file viewing



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MyHDF5



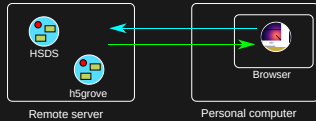
VSCode-H5Web

Complete integration in the web is the most successful

Biggest roadblocks (compression, size limit) were cleared

Easier access point for **other communities**

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Get in touch on [Github](#) or at h5web@esrf.fr! 

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QUESTIONS ?



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