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INFRASTRUCTURE FOR THE EUROPEAN NETWORK FOR EARTH SYSTEM MODELLING

2nd General Assembly

4-6 October 2021
Virtual

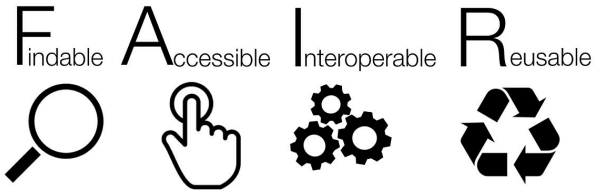
Climate4Impact v2

Alessandro Spinuso (KMMI)
& 2RS Team

IS-ENES3 has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 824084

Climate4Impact (v2) - Redesign

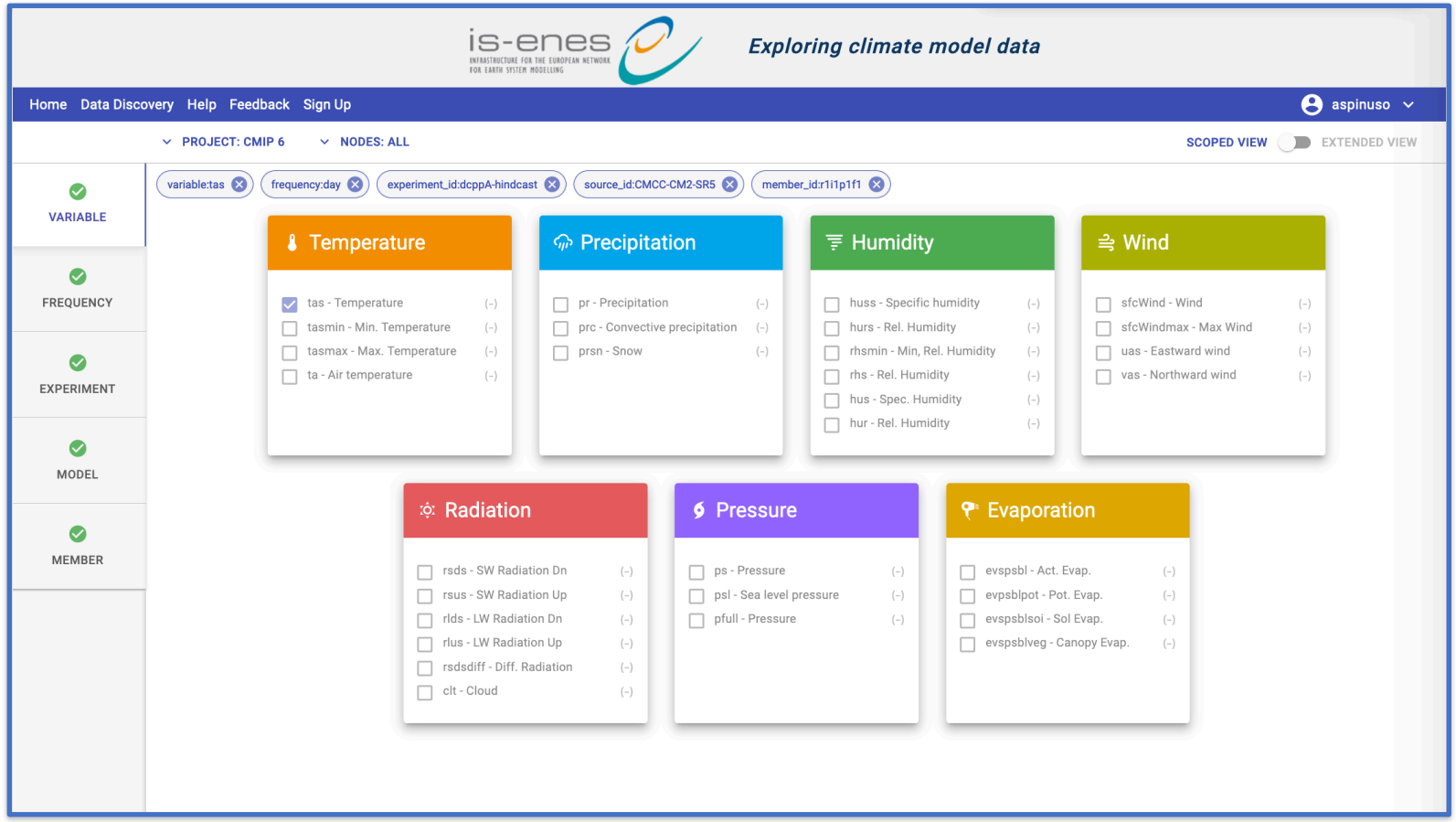
- **Modular Deployment & Decoupled Services**
- **GUI usability & Help/Feedback pages**
- **Flexible analysis features** (Notebooks, ICCLIM and Data Staging/Reduction Workflows)
- **Automated reproducibility mechanisms and link to Documentation** (Data/Analysis)



- **Model Performance Comparison Functionality** (ESMValTool)

Climate4Impact (v2) - Search and Nodes

Interactive Parametrisation made easier



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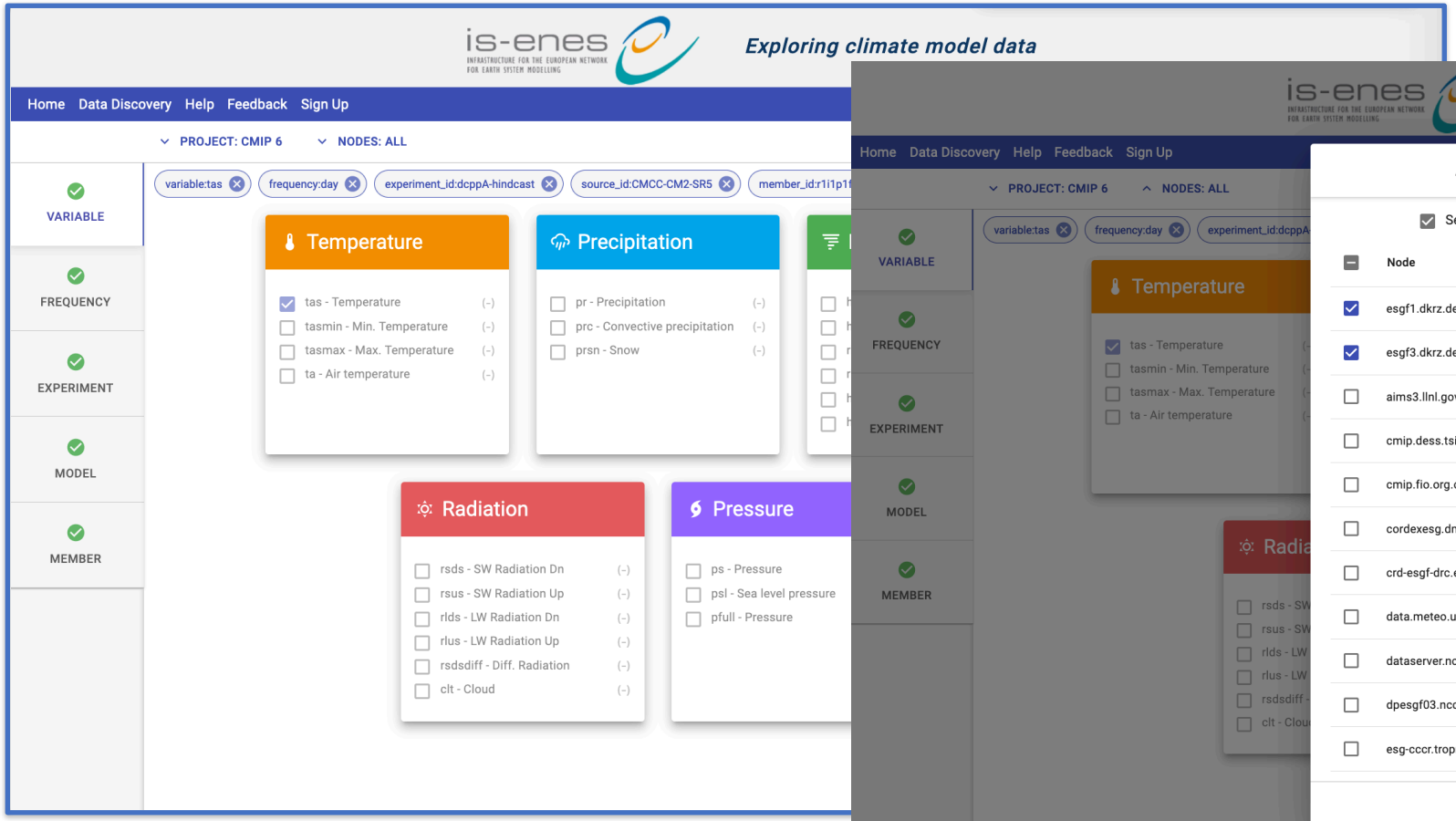
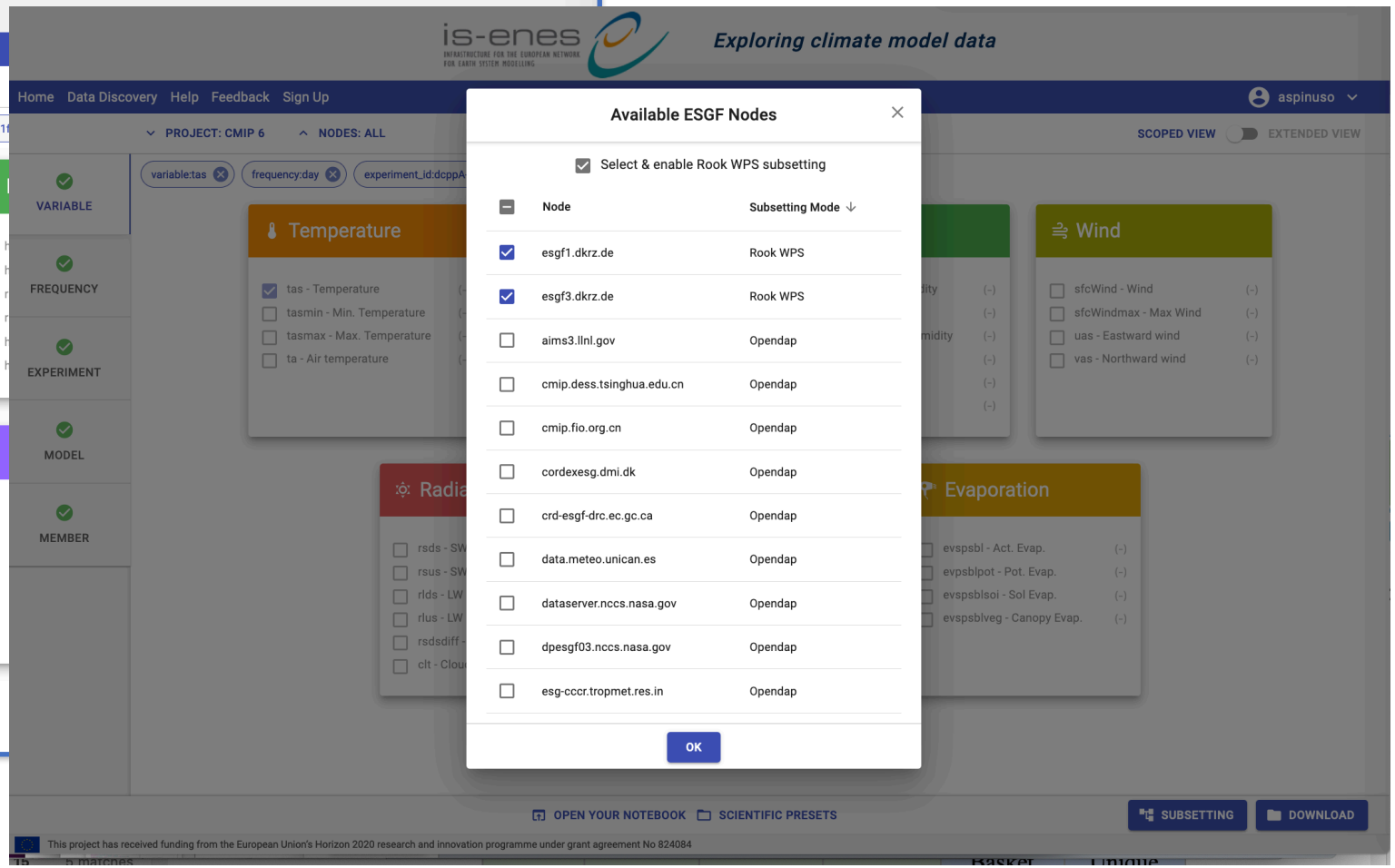


Nodes Selection by Service



Climate4Impact (v2) Workflows & Workspaces

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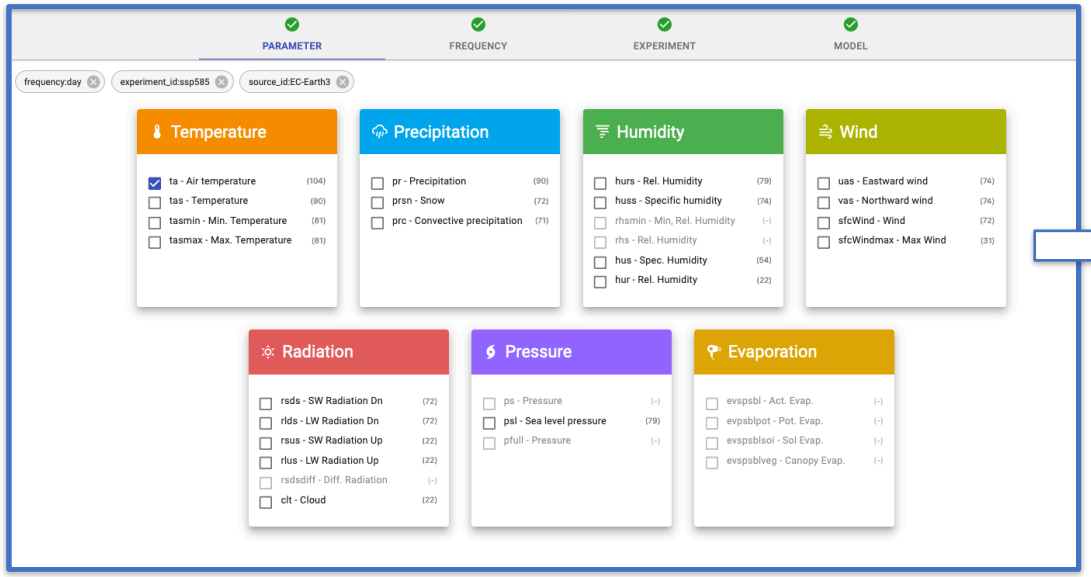
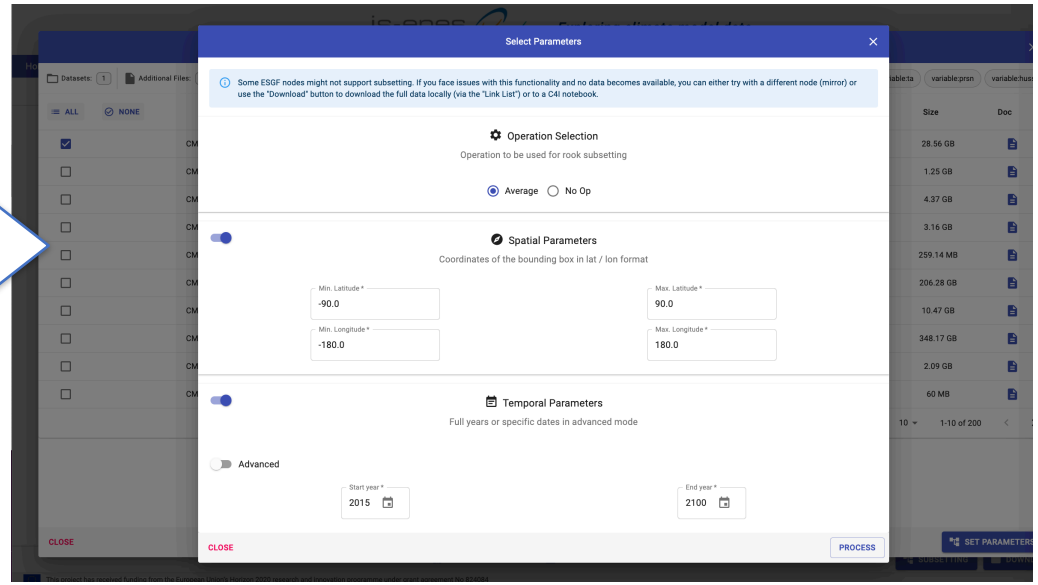
Climate4Impact Search for CMIP5/6 CORDEX Data (Distributed Data)
https://dev.climate4impact.eu



Workflows for data staging & remote subsetting-reduction (WPS) onto Customisable Notebooks



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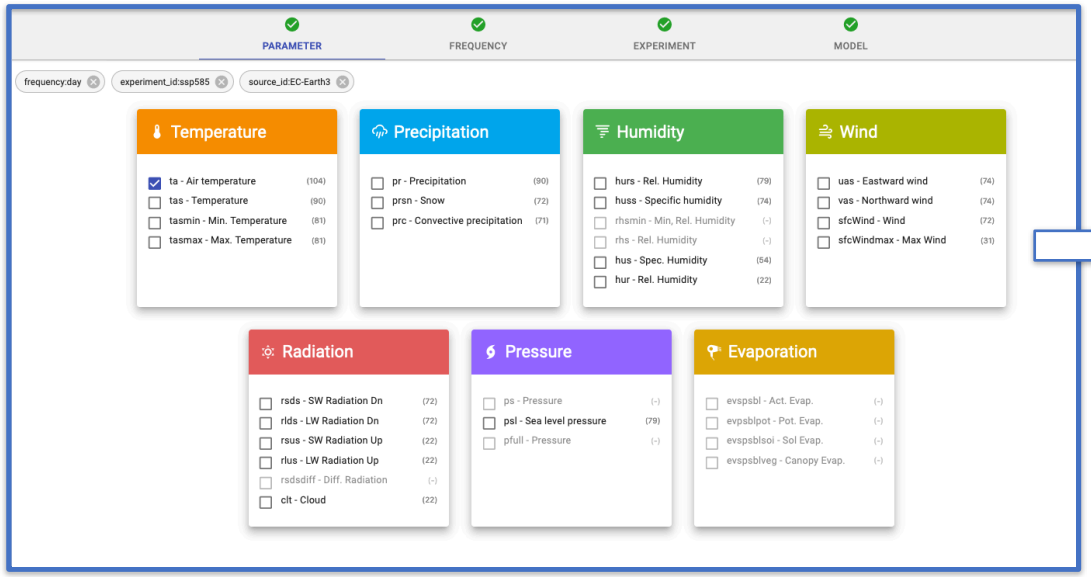

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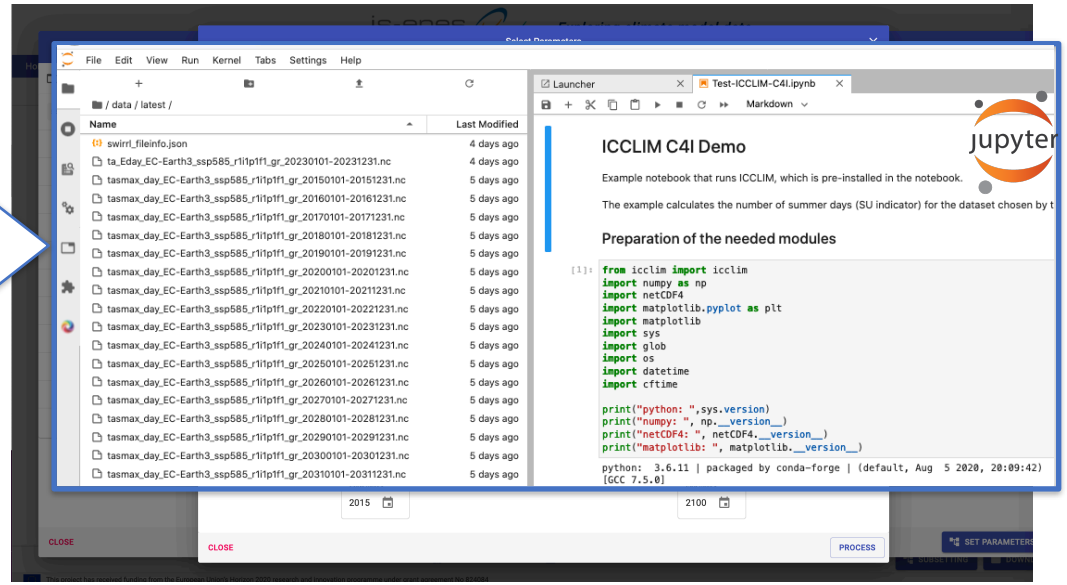

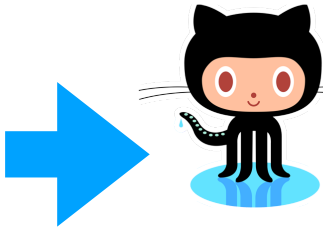

Save Progress to Git

Climate4Impact (v2) Workflows & Workspaces

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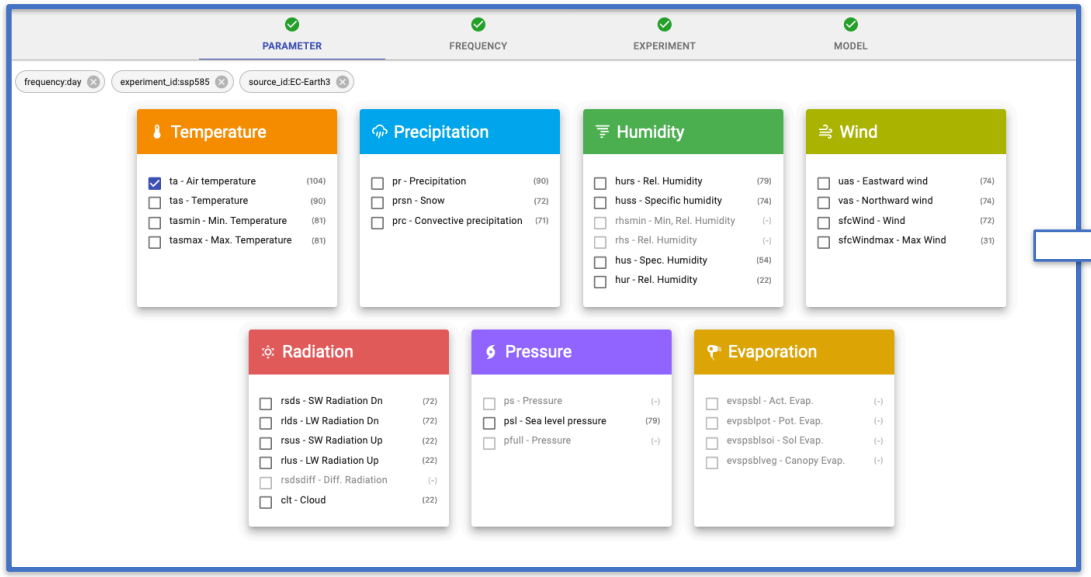

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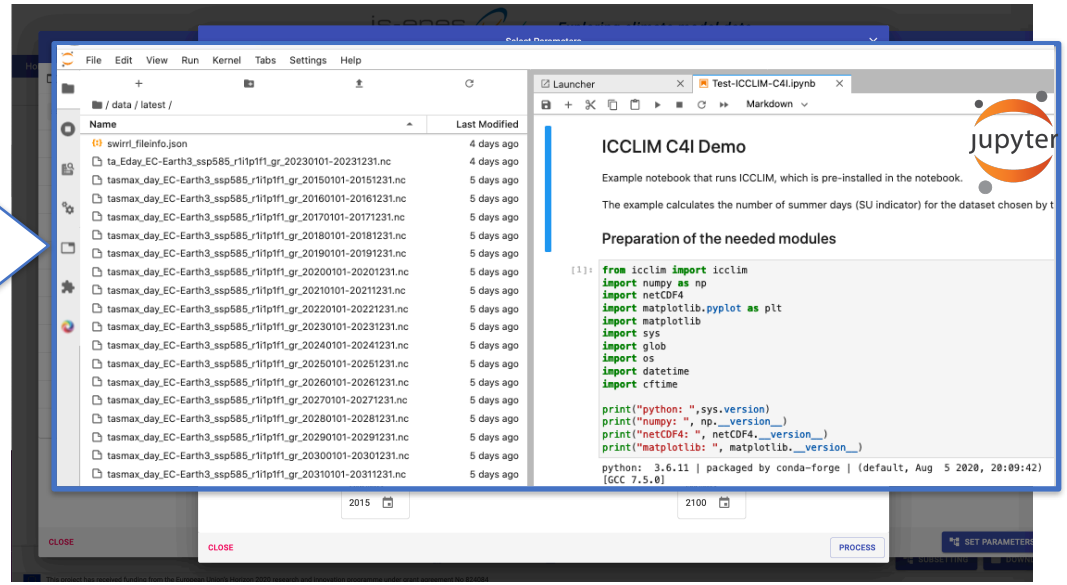

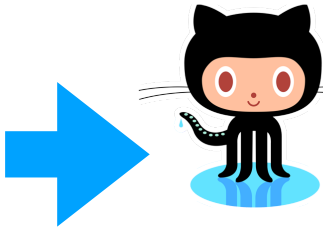

Save Progress to Git

- Trace Changes to Restore, Recover Software and/or Data

W3C PROV

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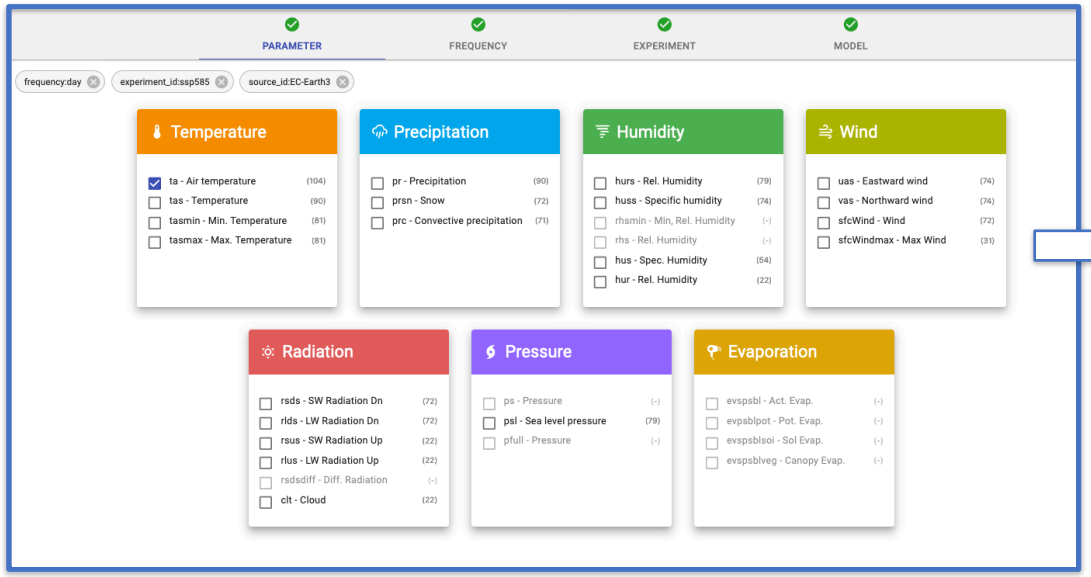

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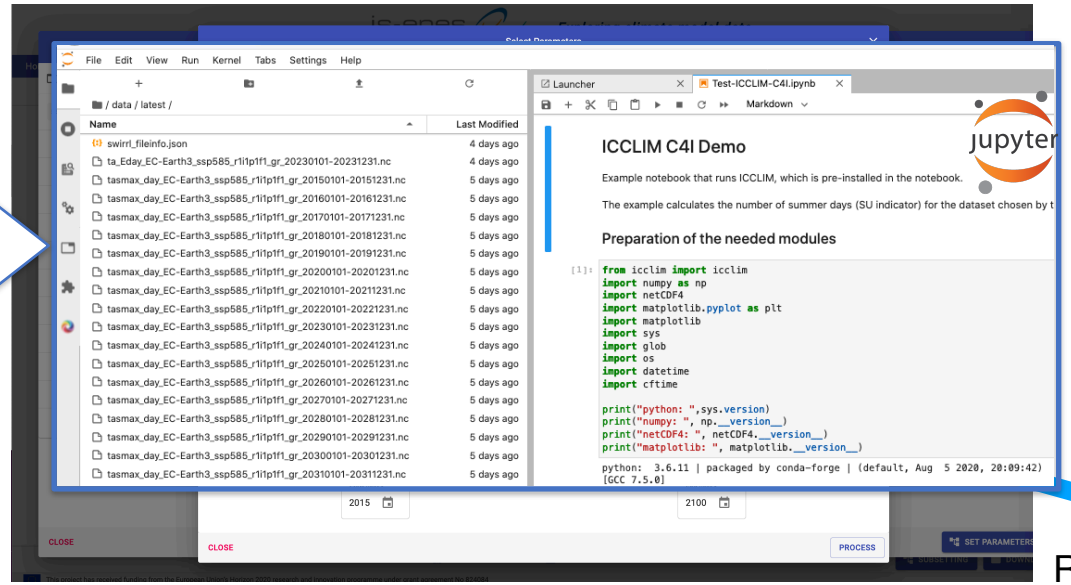


Save Progress to Git

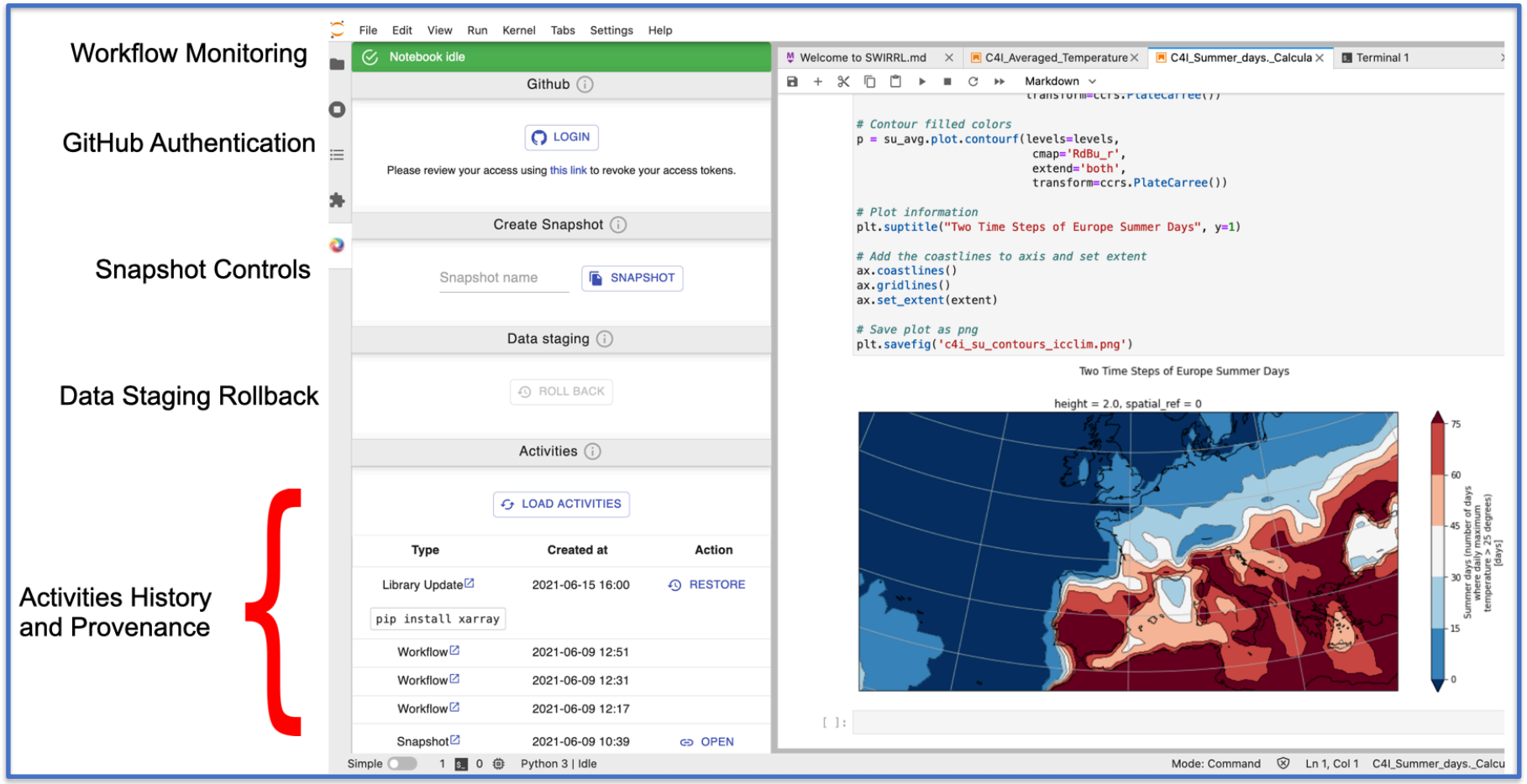
Reduced Data

MyBinder Reproduce

- Trace Changes to Restore, Recover Software and/or Data

W3C PROV

Notebook Presets based on ICCLIM



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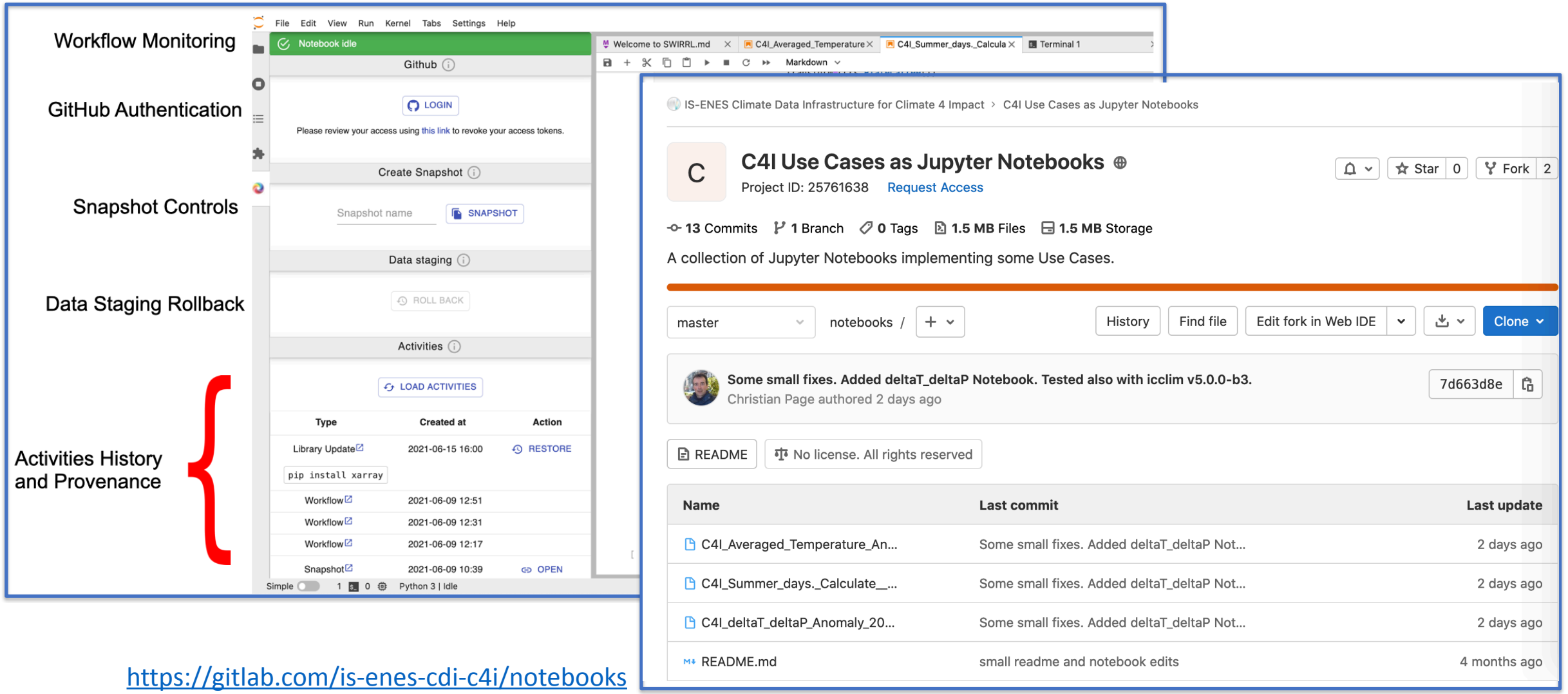


https://gitlab.com/is-enes-cdi-c4i/notebooks

SWIRRL-API

SWIRRL hides the complexity of orchestrating Workspaces in a target **Cloud resource based on Kubernetes Cluster**

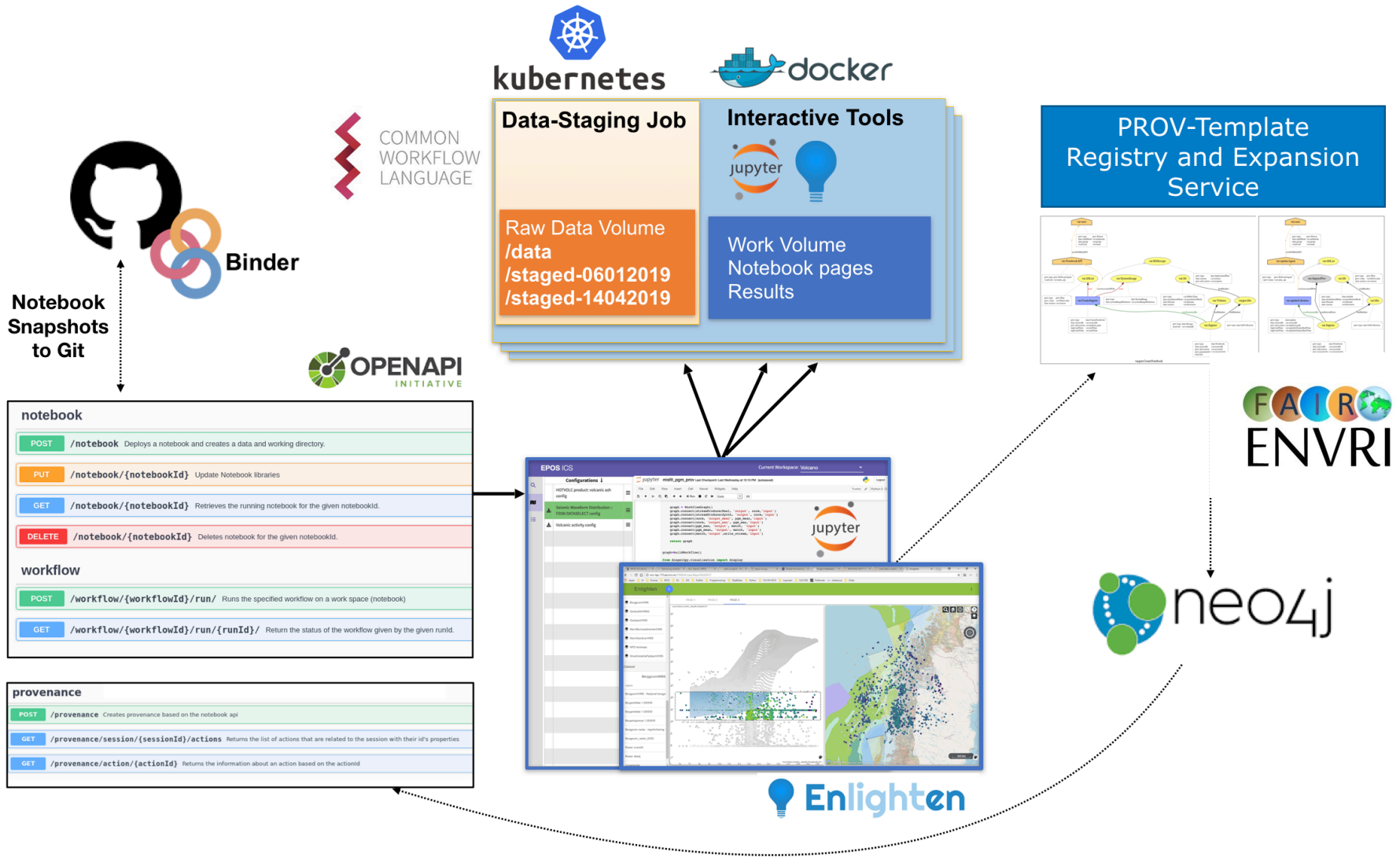
Integrates Interactive Tools (Notebooks, Workflows, GIT, Binder)

Offers a REST Web API

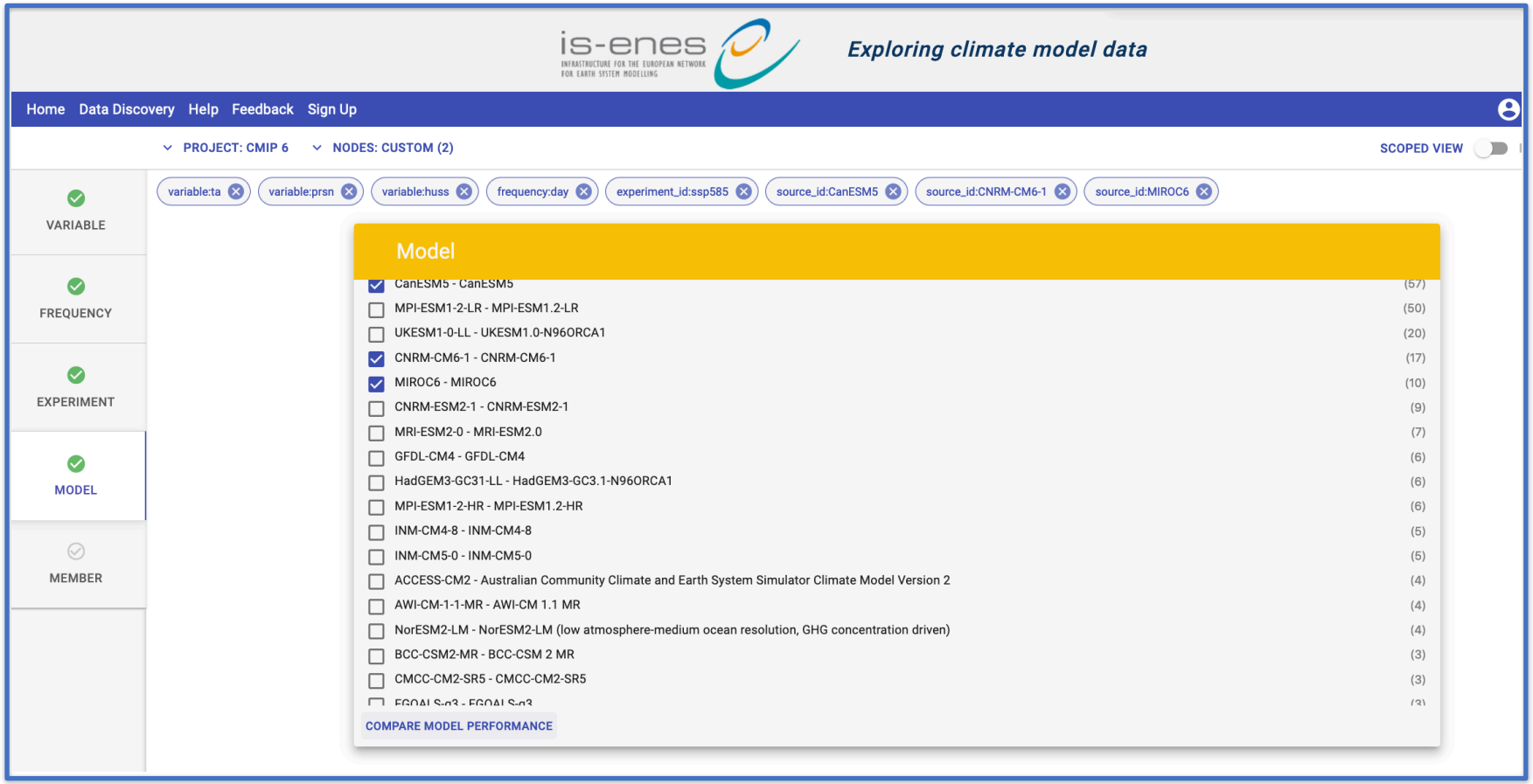
Manages Metadata (Provenance)

Findable Accessible Interoperable Reusable

Supports Reproducibility



ESMValTool in C4I
Models' Performance Comparison



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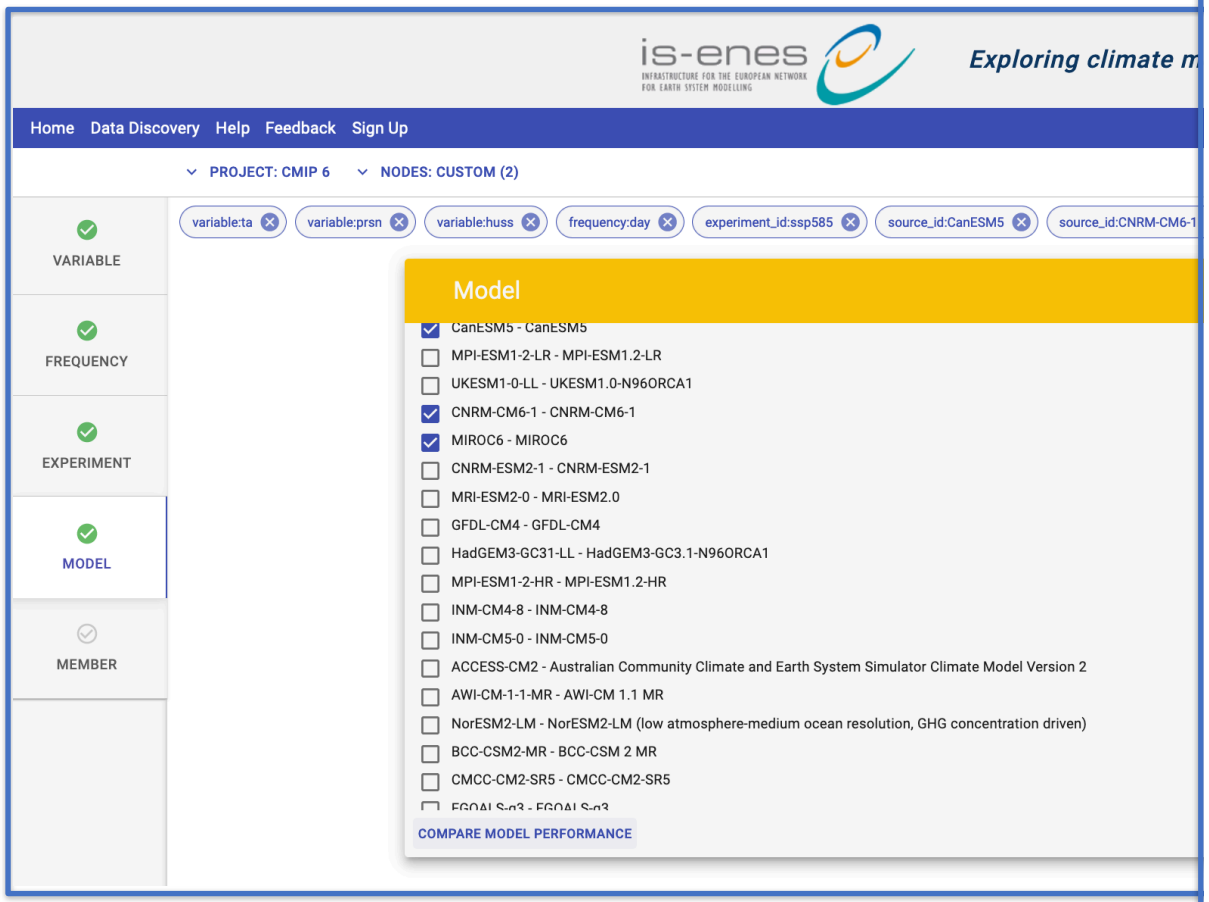
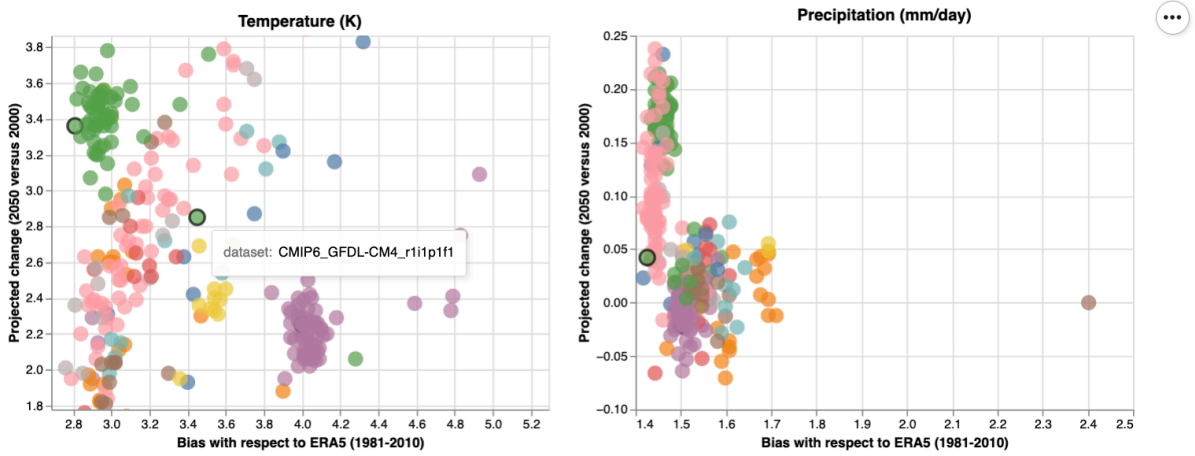


Climate impact result viewer

This applications shows a results from CMIP5 and CMIP6 models, calculated with ESMValTool. It is intended to provide some guidance for climate impact researchers, to select one or more datasets that adequately sample the spread of the CMIP ensemble.

- Bias is calcated with respect to the ERA5 reanalysis dataset over the period 1981-2015.
- Future change is calculated for 2036-2065 as compared to 1986-2015.
- Area is set to Europe (lon 0-39; lat 30-76.25)

Hold ctrl to pan and zoom, hold alt to select a range (points will be highlighted in both graphs), then hold shift to select multiple points.



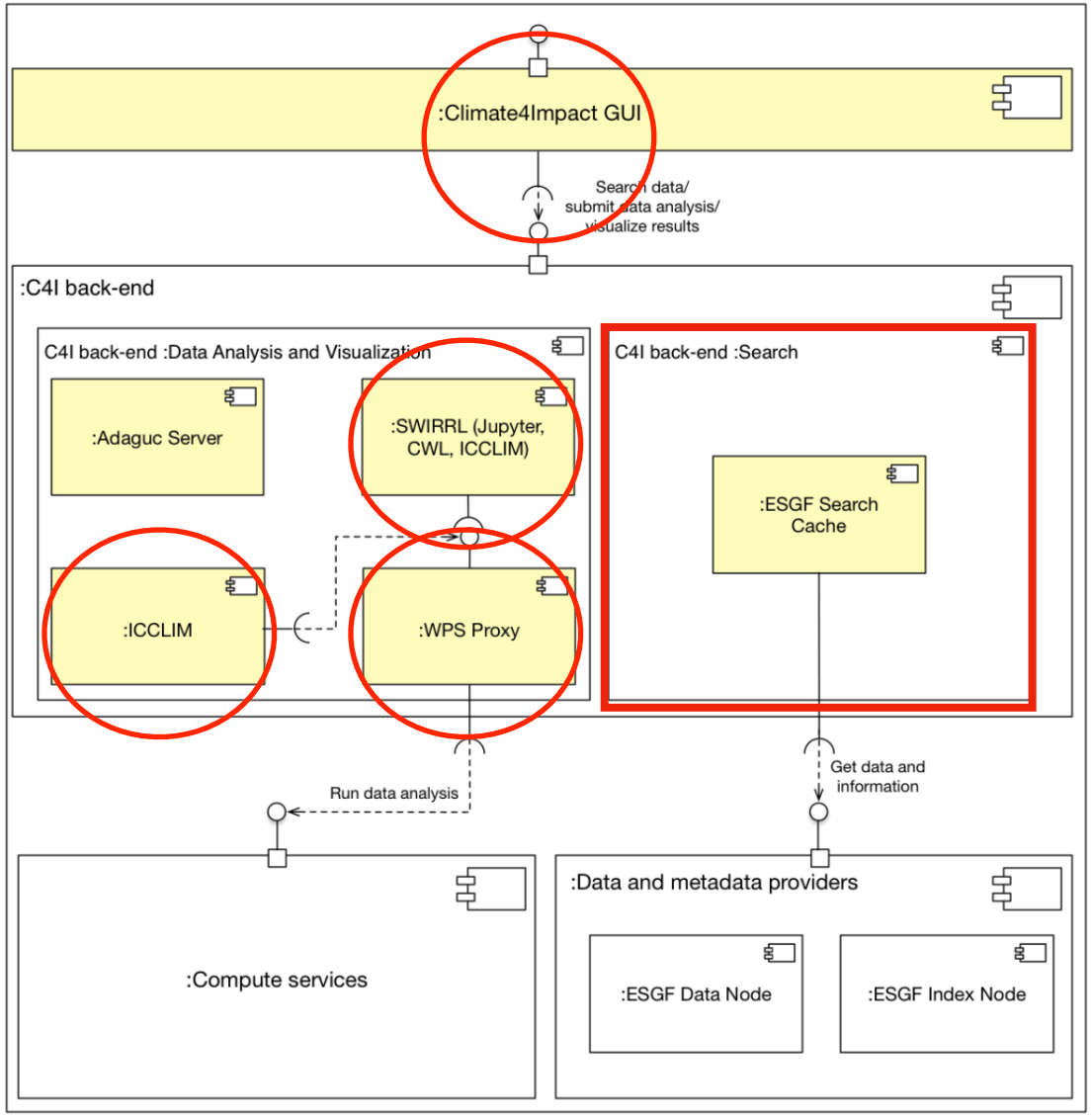
Project_project CMIP6

Selected datasets:

- CMIP6_CanESM5_r1i1p1f1
- CMIP6_CNRM-CM6-1_r1i1p1f1
- CMIP6_MIROC6_r1i1p1f1
- CMIP6_GFDL-CM4_r1i1p1f1
- CMIP6_HadGEM3-GC31-LL_r1i1p1f1

Netherlands eScience Center

Climate4Impact (v2) - ENES CDI



→ AAI To CORDEX

→ ESMVal Info

→ Link to DOI Pages ES-DOC

Climate4Impact (v2) - Future work

Alpha Tester Wanted!

- Register at https://dev.climate4impact.eu

- **More Notebooks Presets** (CERFACS/Icclim)

- **Enable Collection of Usage stats** (KPIs)

- **Access to CORDEX** (via Future Architecture IdP)

CrossWP Activities

- *Wider support for remote data reduction Workflows (with partners)*

- *PoC of updating to new ESGF Search STAC*

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THE CONSORTIUM

Coordinated by **CNRS-IPSL**, the IS-ENES3 project gathers **22 partners** in **11 countries**

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N°824084

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