OSCARS
Open Science Clusters' Action for Research & Society

LAPP
Laboratoire d'Annecy de Physique des Particules

MUST

Virtual Research Environment (VRE)

A new environment for MUST

Léo Chazallet, 13 Novembre 2025
Réunion utilisateurs MUST

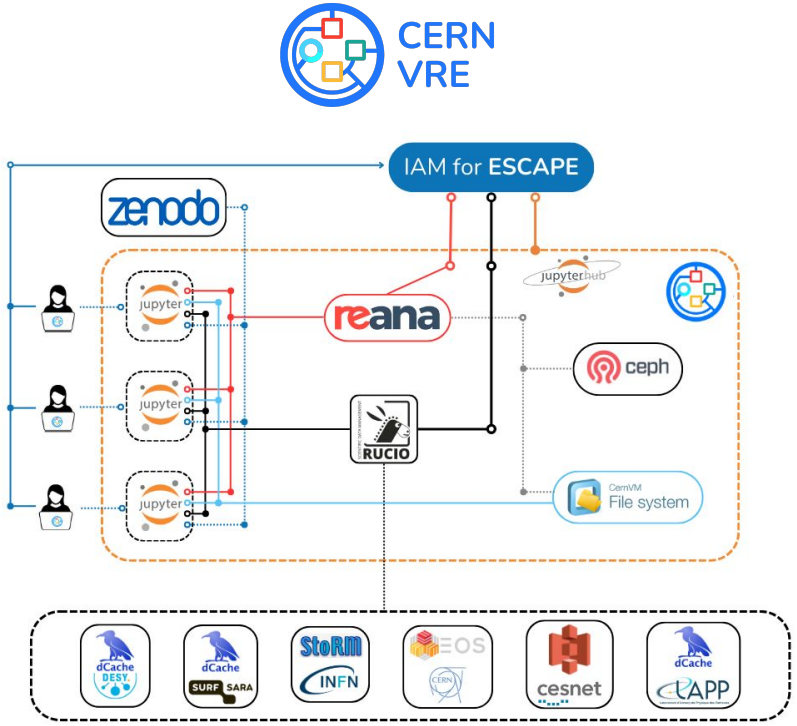
Funded by the European Union

VRE: what is it?

- Analysis platform developed by **CERN** for **interactive scientific work**
- Accessible through a **JupyterHub interface**
- Collection of tools for **storage, analysis,** and more
- Designed to make **workflows simpler** and **faster**

->in compliance with **Open Science**, **FAIR principles (EOSC/ESCAPE/OSCARS)**

Doc VRE CERN : https://vre-hub.github.io/



Jupyter Hub - Notebook

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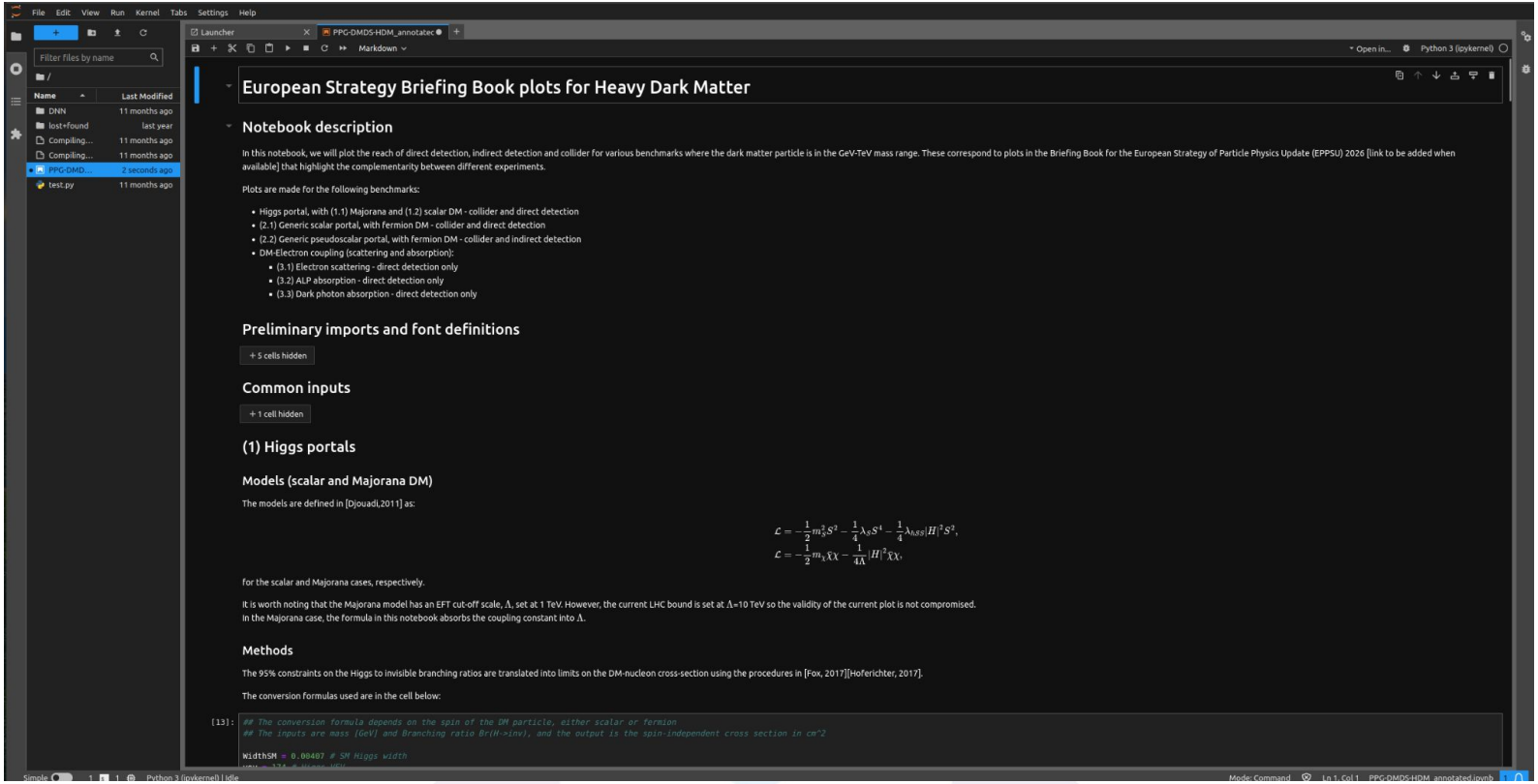
Jupyter Hub

- **Multi-user version** of Jupyter
- Allows multiple users to use Jupyter **simultaneously**
- Manages **access**, **resources**, and **shared environments**

Jupyter Notebook

- **Web interface** for writing and executing code
- **Combines code**, **text**, and **visualizations** in a single document
- Ideal for **interactive analysis** and **data exploration**

Jupyter Hub - Notebook



VRE LAPP

- **VRE deployed locally** on **MUST** in a **Kubernetes** cluster
  - Thanks to the work of **Jean Multigner**

- **Pre-production**

-> A **new interface** similar in spirit to **lappui / VMs**, and potentially a **replacement in the future**

- Our own new platform for **data analysis** with **specific storage management**, **authentication** and **resources**

Looking for new testers / users and feedback

- **Immediately accessible** at your convenience: https://jupyter.must-dc.cloud/
- Login **LDAP** (the same one you use for your PC)
- A **new pod** starts every time for **each user**
- **Tutorials/example images** available (Python, Tensorflow) under Training environments or base image : *datascience notebook* under Work environments
- Possible to **leave** the notebook **without affecting** the user's **workstation**
- Not accessible via VPN
- **Specifications** (subject to change based on the number of users)
  - 5 Go storage
  - 32 Go RAM
  - 4 CPU
- **Be careful with your data!!! No backup, do not store sensitive data**

Upcoming improvements

- User management -> currently user jovyan
- Group management
- Access to different storage areas
  - NFS
  - CVMFS
  - MUSTFS
- Submit a job on HTCondor (dask?)
- User documentation

And others suggestions … ?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Thank you