What do we want to do?

Users can write their own interpreter (language https://github.com/jupyterhub/dockerspawner) as an input for Build a Jupyter notebook https://github.com/jupyterhub/jupyterhub. Compile and run the code. "Collaborative Calculation in the Cloud". Results from the code execution: figures and animations, text, including equations.

A few definitions & acronyms...

Application Programming Interface (API): rules and specifications that software programs can follow to communicate with each other.

DIVAnder: a software tool designed for the interpolation of in situ measurements in n dimensions.

Notebook: web application for the creation and share of documents that include:
- code
- figures and animations
- text, including equations

Virtual research environment (VRE): online infrastructure which aims to help researchers to work collaboratively by managing:
- the software tools, services and technologies,
- the access to data resources, public or private,
- the publication of the results obtained.

Notebooks: what exists today?

Visual research environment (VRE): online infrastructure which aims to help researchers to work collaboratively by managing:
- the software tools, services and technologies,
- the access to data resources, public or private,
- the publication of the results obtained.

Why do we use Jupyter?

1. Open source... as the others
2. Many programming languages... as the others
3. Easy installation... as some of the others
4. A nice solution to deploy on a cloud: JupyterHub

A few more words about...

Multi-user Hub which spawns manages proxies multiple instances of the single-user Jupyter notebook server (https://github.com/jupyterhub/jupyterhub).

How will we use notebooks in the VRE?

3 steps into 1

With DIVA
(1) Read the doc
(2) Compile and run the code
(3) Document the execution: parameters, configuration, ...

Using different languages in different cells, Document the execution: parameters, configuration, …

Next steps

1. Text cell to document the code
2. Cell codes that can be executed piece by piece
3. Results from the code execution
4. Figures or animations

Anatomy of a notebook

Notebooks contain:
- Text cell to document the code
- Cell codes that can be executed piece by piece
- Figures or animations

More than 40 language kernels available

How will we use notebooks in the VRE?

Figures or animations

RESTful API

ODIP And Open source… as the others

https://github.com/gher-ulg/

JupyterHub

Next steps

Use the files produced by webODV as an input for DIVAnder
Build a RESTful API to make easier the integration into the VRE
Publish the notebooks along with the data and the products

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