



Contribution ID: 27

Type: **Workshop/Training**

## How to evaluate and improve reproducibility? Lessons learnt and good practices with VIP and EGI

*Monday, June 19, 2023 4:00 PM (1h 30m)***Duration**

90 minutes. *Constraint: the authors will only be available for giving the tutorial at the beginning of the week (Monday or Tuesday)*

**Purpose**

This tutorial is aimed at all researchers interested in evaluating and improving the reproducibility of their research results. It will be based on practical examples with VIP and EGI.

**Context**

VIP is an open web portal for medical simulation and image data analysis. By effectively leveraging the computing and storage resources of the EGI federation, VIP offers its users high-level services enabling them to easily execute medical imaging applications on a large scale computing infrastructure.

Within the ReproVIP project, we aim at evaluating and improving the reproducibility of scientific results obtained with VIP. Our final goal is to provide an integrated, end-to-end solution, allowing researchers to launch reproducible executions in a transparent manner.

**Content**

This tutorial will include a theoretical (approx. 30min) and a practical part (approx 1 hour). During the theoretical part, the audience will learn about several issues in computational reproducibility (across computing environments, libraries, versions) and how they can be handled through technical solutions.

The practical part will focus on the tools and services provided by VIP and EGI for evaluating and improving reproducibility (e.g. Jupyter notebooks, Binder instances and the VIP API).

- As a first step, participants will carry out reproducibility experiments on a medical imaging application. This will be done through EGI notebooks making calls to the VIP platform, where the application is available as a service.

- The same notebooks will be used to perform analyses and visualize the variability of the application outputs between several executions.

- Finally, these notebooks will be used to learn how any scientific work can be shared through the EGI-Replay service, by deploying an EGI-Binder instance.

**Requirements**

Participants will need to bring their own laptops. The tutorial materials will be accessible online through their web browser.

**Other key topic****Key Topic**

Data analytics platforms and reproducible open science

**Primary authors:** VILA, Gael (Centre Nationale de la Recherche Scientifique (CNRS)); Mr CORNIER, Alexandre (Centre National de la Recherche Scientifique); BONNET, Axel (CNRS); FERNANDEZ, Enol (EGL.eu); Mr MEDERNACH, Emmanuel (Centre National de la Recherche Scientifique); PANSANEL, Jerome (CNRS); POP, Sorina (CNRS)

**Presenters:** VILA, Gael (Centre Nationale de la Recherche Scientifique (CNRS)); Mr CORNIER, Alexandre (Centre National de la Recherche Scientifique)