

CMS Jet Energy Corrections case study

REANA mini-workshop ~ 24 Feb 2021

Adelina Lintuluoto

About the analysis

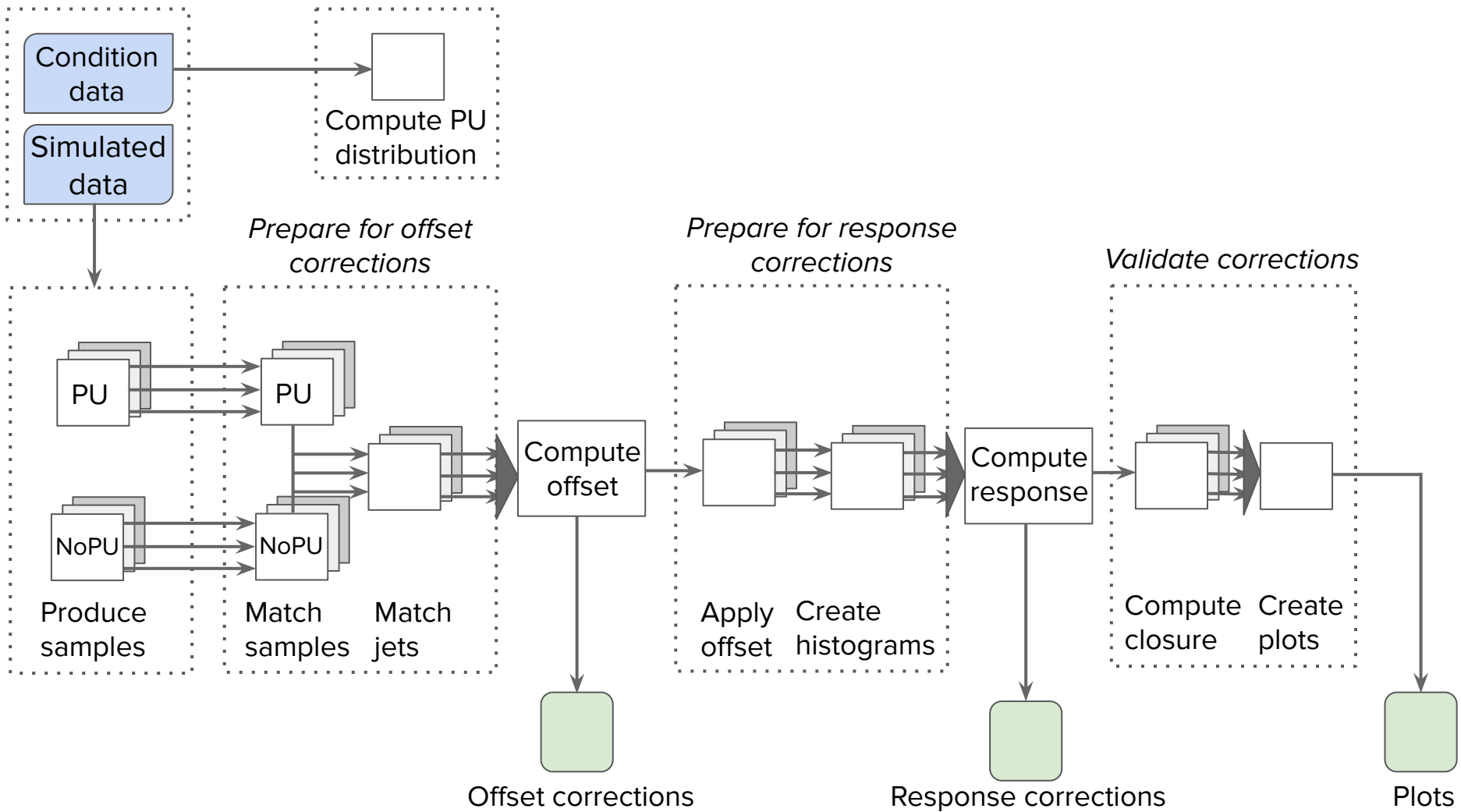
- Sequential multi-step calibration process
- Highly parallelisable

About the workflow

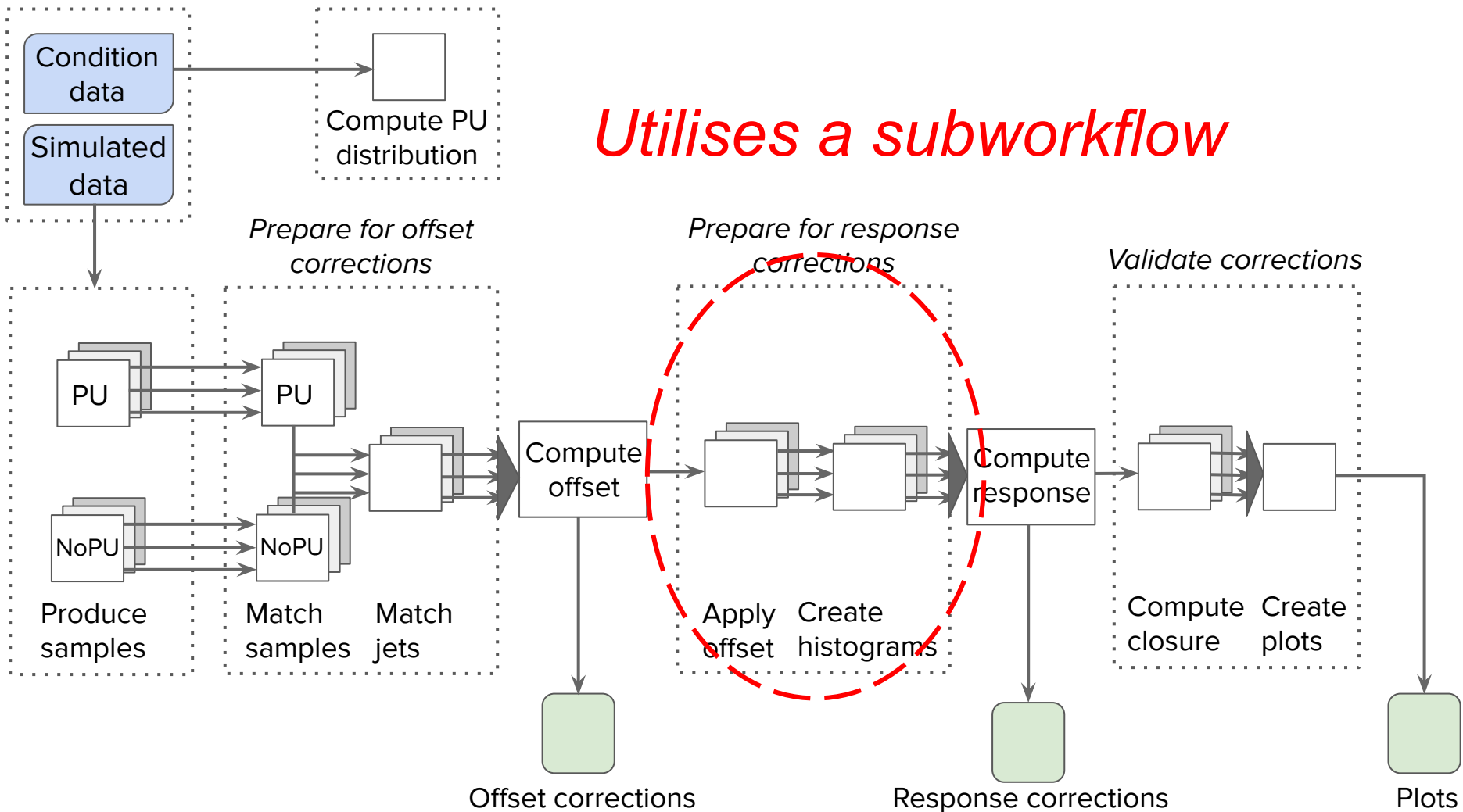
- Structured in Yadage

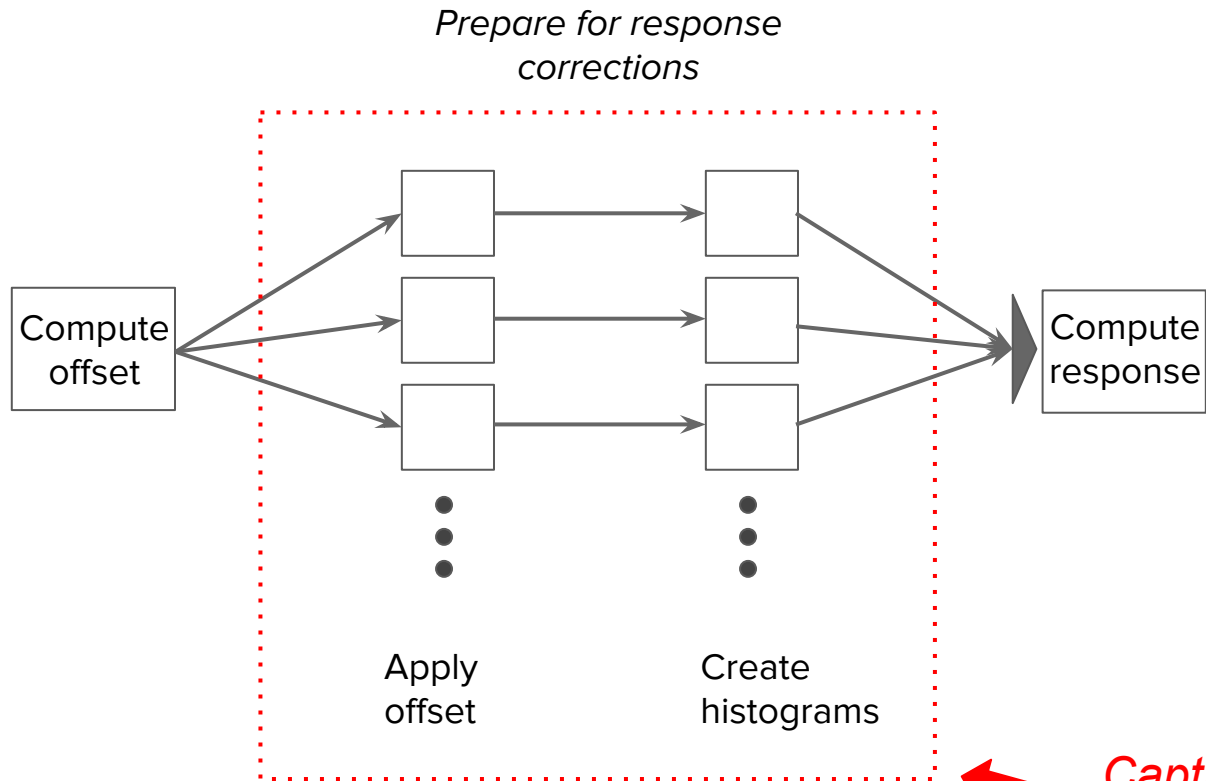
Capturing the computational environment

- Source code hundreds files
- Want to avoid compilation at every step
- **Also want to use Gitlab-REANA integration, i.e. the source code can't be part of the image**
 - Super lightweight Centos7 Docker image
 - First step of the workflow compiles the code in the REANA workspace
 - Beginning of each step `cd $(cat {workdir})`



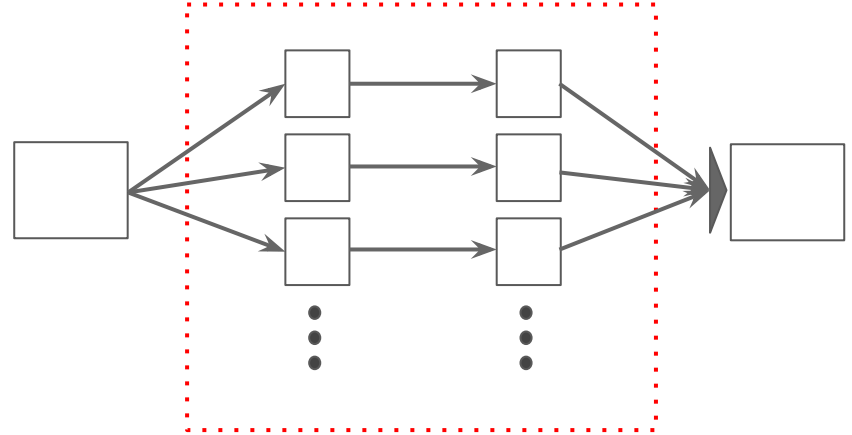
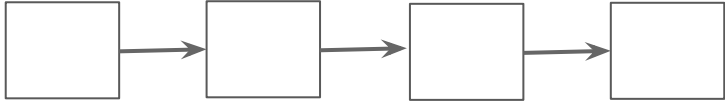
Utilises a subworkflow



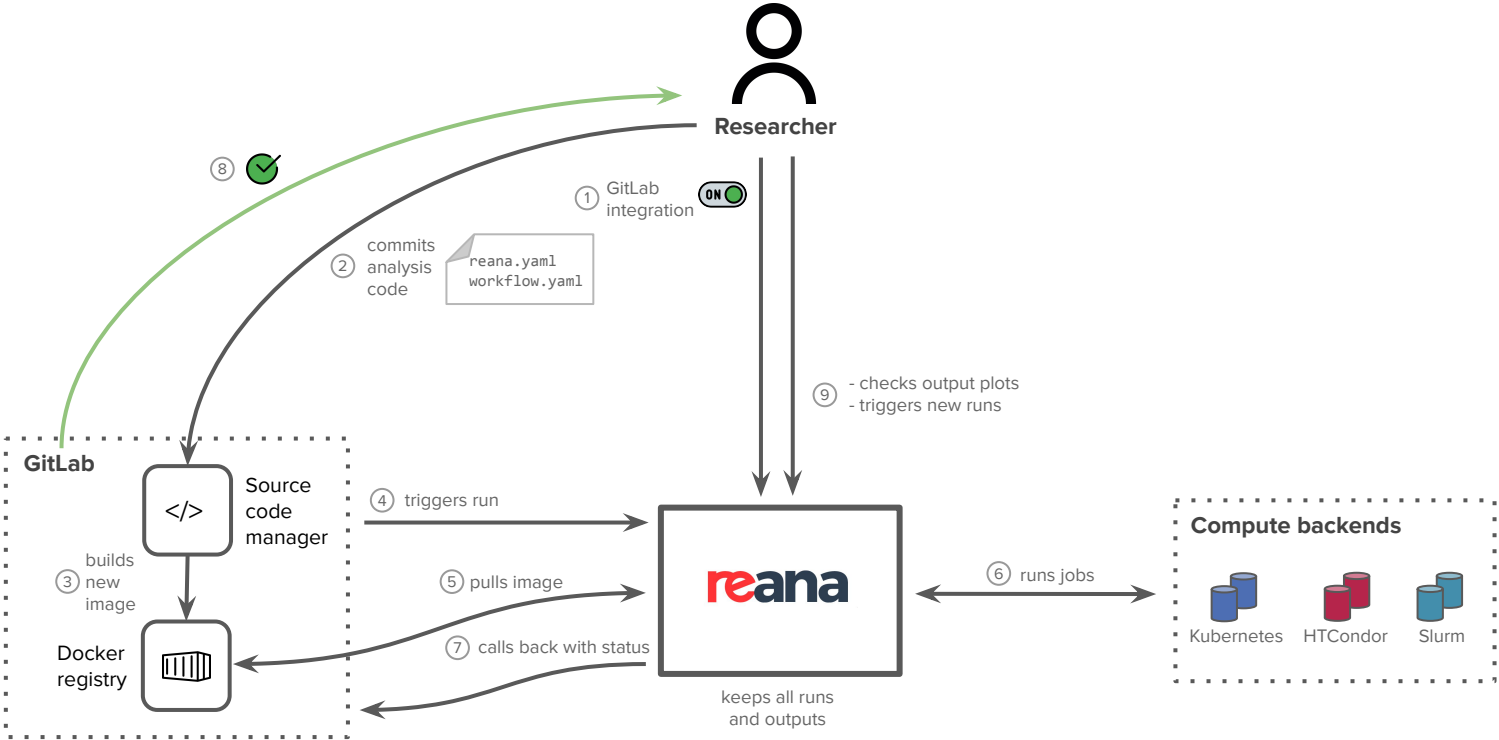


Captured with a subworkflow

Verses



Gitlab-REANA integration



icons made by [Freepik](http://www.freepik.com) from www.flaticon.com

1. Add the sub-project as a remote

```
git remote add JetMETAnalysis git@github.com:alintulu/JetMETAnalysis.git
```

2. Add the sub-directory by referring to the remote

```
git subtree add --prefix code/JetMETAnalysis JetMETAnalysis ilias-PR-26-11-2020 --squash
```

- `--prefix code/JetMETAnalysis` specifies the location of the sub-directory
- `JetMETAnalysis` is the name of the remote repository
- `ilias-PR-26-11-2020` is the name of the remote repository branch
- `--squash` squashes the whole commit history into one commit

In the future, whenever the analysis code has updates you want to run on REANA, follow the two steps:

1. Update the sub-directory from the remote with

```
git subtree pull --prefix code/JetMETAnalysis JetMETAnalysis ilias-PR-26-11-2020 --squash
```

2. Push the changes to GitLab

```
git push origin master
```

Possible additions

- Gitlab-REANA:
 - Trigger with merge request to GitLab.
 - Use submodule instead of subtree
 - If commit contains something like REANA CI: false do not trigger pipeline
- Be able to search file by name
- Send a notification to user if workflow fails
- Compare plots across runs