

- experience
- Faster **re-interpretation** method





- **b-jets** are essential for many searches in ATLAS
  **b-tagging** is performed using machine learning algorithms
- trained with Monte-Carlo simulated events
- The performance of algorithms is evaluated in data to correct the simulation (scale factors)

## **Application Example**



- **Docker :** Preserving the environment of the code
- **Gitlab**: Using CI/CD to run the Docker image
- **Reana**: Orchestrating the automation workflow

Multiple workflow systems: yadage, CWL

Multiple storage backends: EOS

Multiple CPU backends: Kubernetes, HTCondor

## More Features ...

- $\begin{array}{c} 1.4 \\ \textbf{ATLAS } \text{Preliminary } \sqrt{s} = 13 \text{ TeV}, 36.2 \text{ fb}^{-1} \\ 1.2 \\ \textbf{b-jet calibration with } t\overline{t} \text{ events, stat-only unc.} \end{array}$
- 1.4 **ATLAS** Preliminary  $\sqrt{s} = 13$  TeV, 36.2 fb<sup>-1</sup> b-jet calibration with  $t\bar{t}$  events, stat-only unc.



- The automation is implemented to the b-tagging calibration code
- Full calibration produced with **only one command**
- Running time reduced from 4 hours locally to **1 hour**



- New features to calibrate using flexible WP and flexible p<sub>T</sub>
  binning
- These features allow to save time while calibrating a new tagger (taking previously ~ 9 months)

## Beyond ...

- Same method can be applied to **any analysis code** in ATLAS
- Useful for Run III + Run II combinations
- Offering a better communication of results for **newcomers** and between different disciplines to reproduce results

