Self Introduction
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PyHEP.dev

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Myself:

- PhD Student (almost finished) at the RWTH Aachen University

- Supervisors (Institute III A):
  - Prof. Martin Erdmann
  - Prof. Alexander Schmidt

- Member of CMS Collaboration

- Thesis: dileptonic HH $\rightarrow$ bbWW with W $\rightarrow \{e, \mu\}\nu$

- Analysis published recently in a PAS: CMS-PAS-HIG-21-005

  $\rightarrow$ Journal publication is on the way!

- Started the HH inference tools (combine-based fitting workflow for HH@CMS)

My Group:

- Group leader: Prof. Martin Erdmann

- 6 PhD Students working on HH $\rightarrow$ bbWW, HH $\rightarrow$ bbbb, VH(bb), tH+ttH+ttHH

- Developing and maintaining VISPA cluster: vispa.physik.rwth-aachen.de

- Scikit-HEP env (coffea, uproot, awkward-array, hist, ...)
  - User & contributor since the early days (~beginning of 2019)
  - (I believe) the HH →bbWW analysis was one of the first in CMS to use this ecosystem to its fullest extend

- Fast analysis turnaround with a cache-aware Dask cluster on small computing clusters (e.g. VISPA): https://link.springer.com/article/10.1007/s41781-023-00095-9 (Hardware-close analysis optimisation)

- JAX-based binned likelihood fitting tool: dilax   ⬅   *that's why I'm (primarily) here*

- Experience on other things:
  - Workflows in analysis (LAW/Luigi + Dask)
  - Meta-data organisation tool: ACI (similar to order by Marcel Rieger)
  - Outsourcing resource-intensive analysis steps:
    ML inference via TF model server and hists via Dask's "Actors"
  - First sustainability (in physics) workshop in Germany:
    https://indico.desy.de/event/37480/