

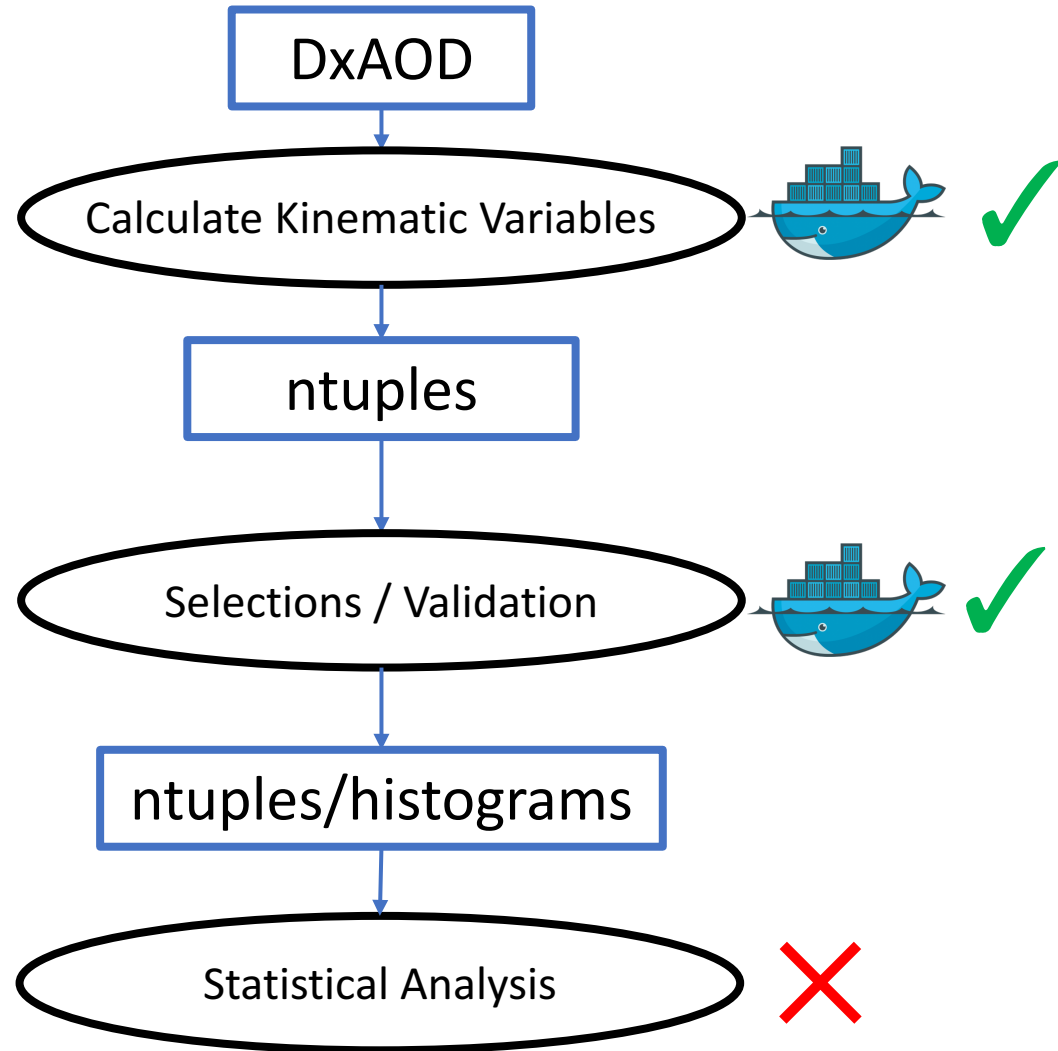
ATLAS Updates

Jared Little

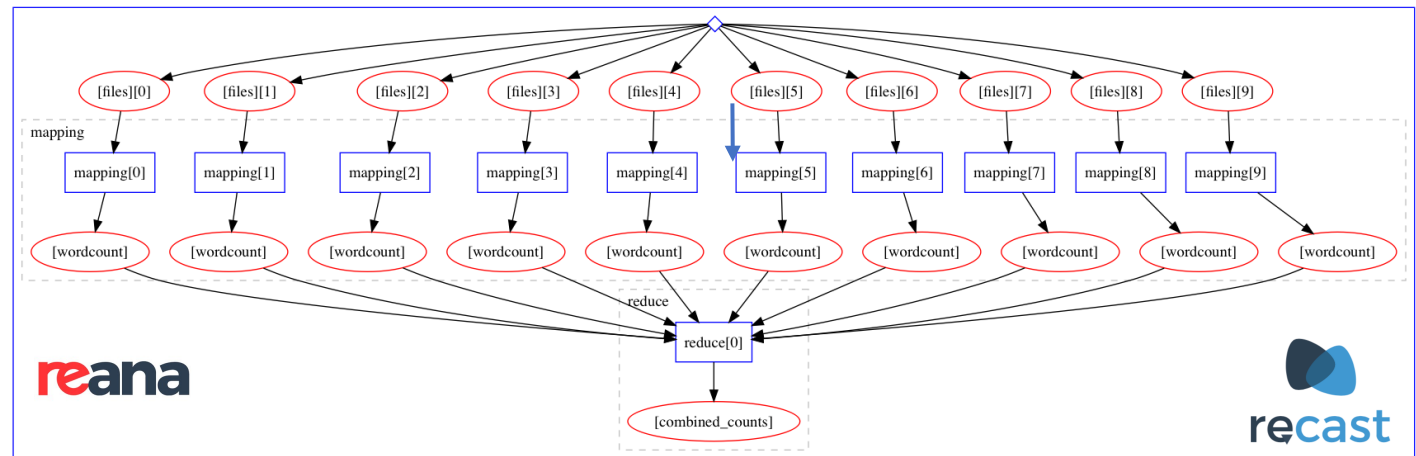
CHEP

Thank you to everyone: <https://indico.jlab.org/event/459/contributions/11544/>

- Proceedings submission by: Friday, 8th of September 2023. 12 page limit.



 $\geq 10 TB$ (if we scale up)



Webinar

- <https://eoscfuture.eu/eventsfuture/dark-matter-an-eosc-future-science-project-webinar/>
- Webinar was recorded, to be made available for reference going forward.
- Combination of CHEP plenaries, but made more logically into one presentation.
 - Meant to be all-inclusive DM/VRE presentation.
- Recording available here: <https://cernbox.cern.ch/s/nMSGOWQYT1J6UND>
- Post-event write up given to EOSC-Future.

$Z' + E_T^{miss}$ Analysis

Considering two signal models (right)

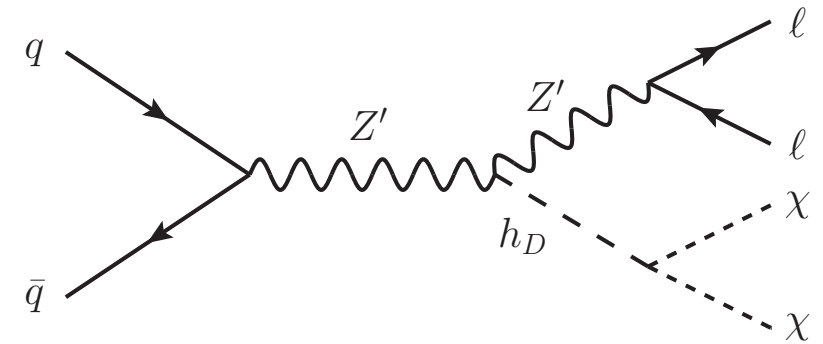
- Two models described in detail:
 - <https://arxiv.org/pdf/1504.01386.pdf>
- **Six free parameters** in each model:
 - Three couplings: $g_q = 0.1$, $g_l = 0.01$, $g_D = 1$
 - Three masses: $m_{Z'}$, and two dark sector particles.

Analysis has been unblinded!

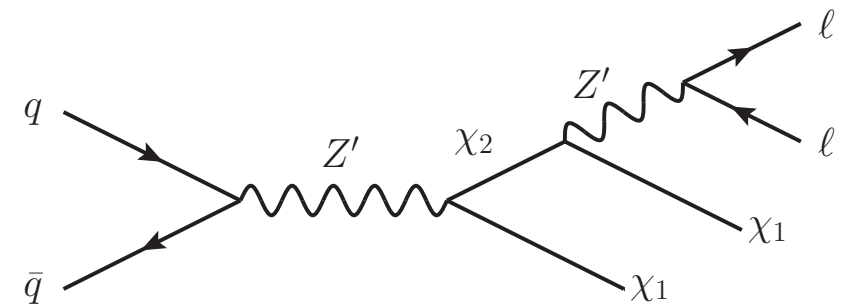
- We are receiving internal feedback now on our paper draft.
- Analysis approval meeting tomorrow.
- Large portion of this analysis already containerized and runs on the VRE.

Limits being set on fiducial cross-section as well as lepton coupling.

Dark Higgs:



Light Vector:



Goals

- Most of the $Z'+\text{MET}$ analysis is in place now, focus will be on the paper and ATLAS RECAST.
 - Connect RECAST with VRE, lots of overlap here.
 - Best way to document this for other ATLAS analyses?
- Finalize projects.
 - Reinterpretation has been finished, but I need to go through the steps of cataloging.
- New dilepton+X analysis: I can try to set up the RECAST as I proceed, and encourage further collaboration.
 - Not sure how this will play out though, a bit time dependent.