Making DPD2 from scratch and with TauDPDMaker

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NAF & FDR Tutorial
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Overview

- Marcello introduced DPD in general…
- I will say two more words about DPD2
- Sylvie will talk about DPD3 next

- I will then give an overview of the tutorial and let you work it out by yourself

- I'm available to help all this morning
- Please don't hesitate to ask any question!

About DPD2…

- Technically speaking, DPD2=DPD1
  - only difference is who runs the job…
    - DPD2 = run privately, DPD1 = ATLAS production
- DPD2 has pool.root format
  - Powerful
    - readable with athena
    - supports reconstruction algorithms, access DB, etc.
    - skimming, slimming, thinning tools work very nicely!
  - Usage for analysis still experimental…
    - heavier and slower than DPD3
    - AthenaRootAccess & cie not entirely stabilized yet

TauDPDMaker

- Combination of DPD1 + DPD3
  - DPD1 centrally produced by ATLAS prodsys
    - two skims: W/Z→lepton(s) and dijets
    - EvtCounter helper for MC luminosity after skimming
  - Private DPD1→DPD3 production
    - make DPD3 with basic EventView tools
    - analyze DPD3 with pure root
- Support all releases, from 13.0.30 to 14.X.0
- Support all input format: AOD, ESD, generator, …
- Provides generic ControlSampleTree (DPD3)
  - feel free to use it if it fits your needs (see Sylvie's tutorial)
- Design foresees several independent DPD3:
  - all benefits from the common infrastructure
  - each ntuple has its own EV configuration
- Has "tau" in the name, but is pretty general actually…

The tutorial (I)

- Ex.0: Use TauDPDMaker has a black box
  - first see what it can do for you
  - you'll understand later *how* it does it…
- Ex.1: Make DPD2 from scratch
  - create an empty DPD2
  - add/remove pool containers
  - explore the content of a DPD2
    - the size of containers varies quite a bit…
  - see that you can filter events with skimming

The tutorial (II)

- Ex. 2: Read back your DPD2 with athena
  - in itself, reading is trivial
  - realize that athena algorithms need specific pool containers to work correctly
  - more complex: find which specific containers are needed by different athena algorithms
    - Bottom line: your DPD2 content depends on the algorithms you wish to execute
      - in addition to the average event size of course!
- Ex. 3: Learn about interactive athena
  - very nice to explore and debug python code
    - quick & easy… worth 5 last minutes at the end! ;-)