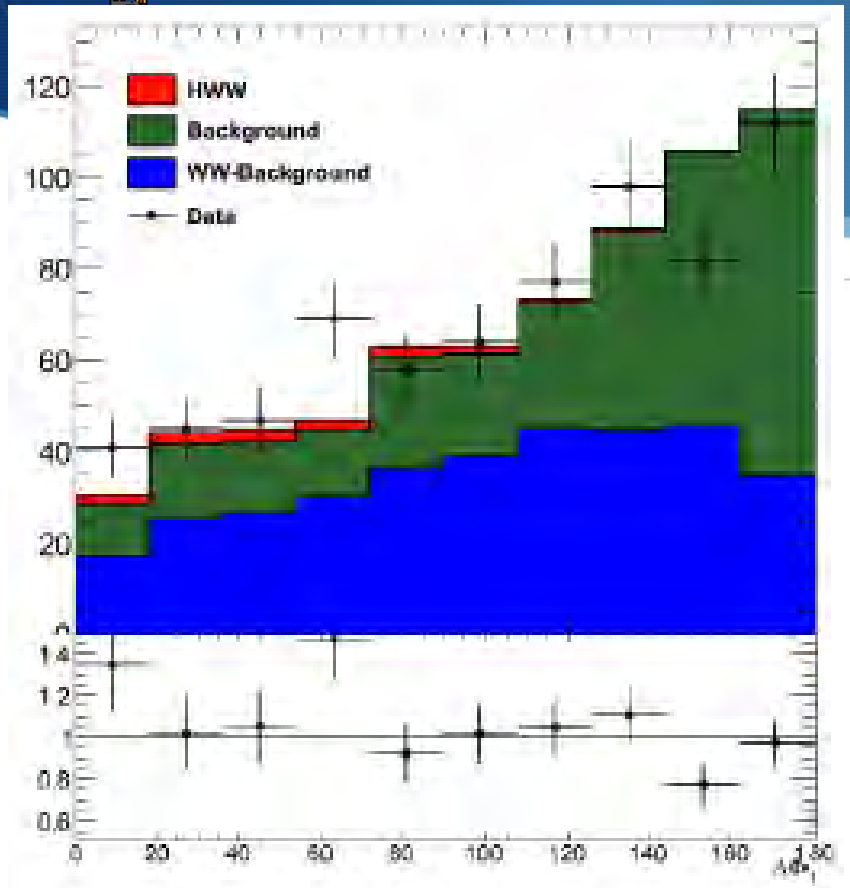
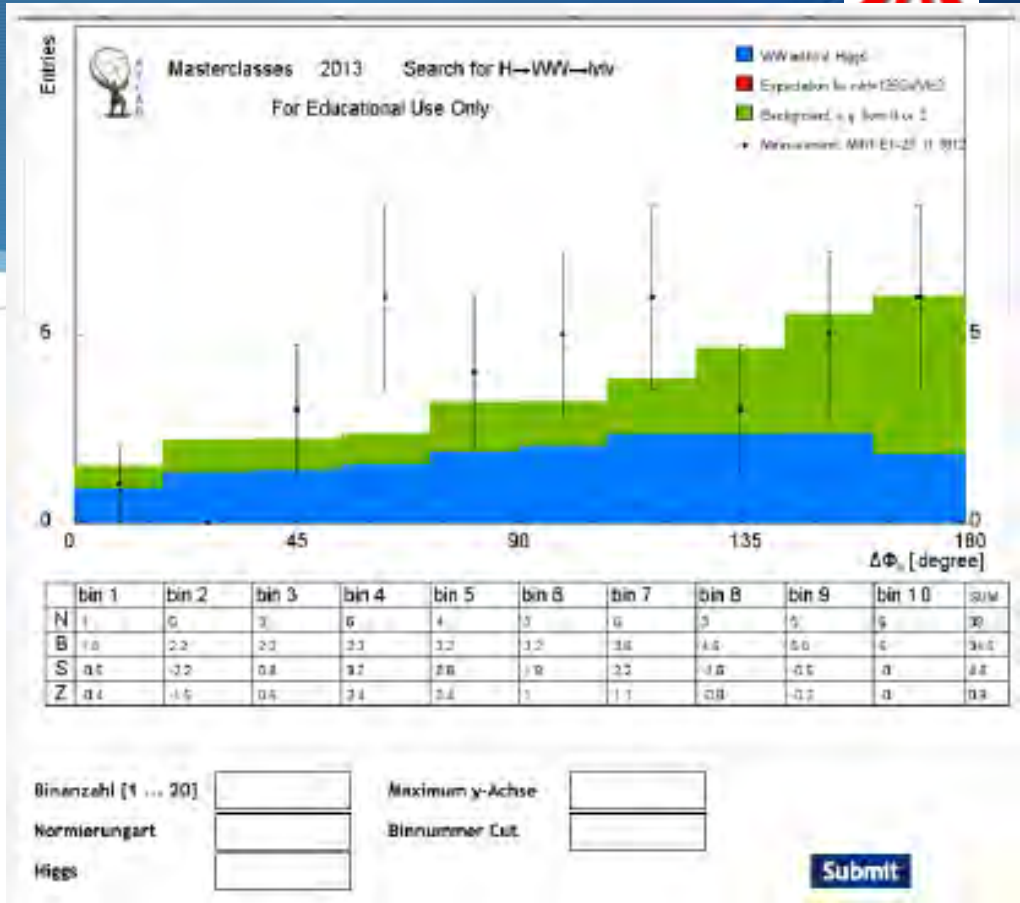
ATLAS W-path

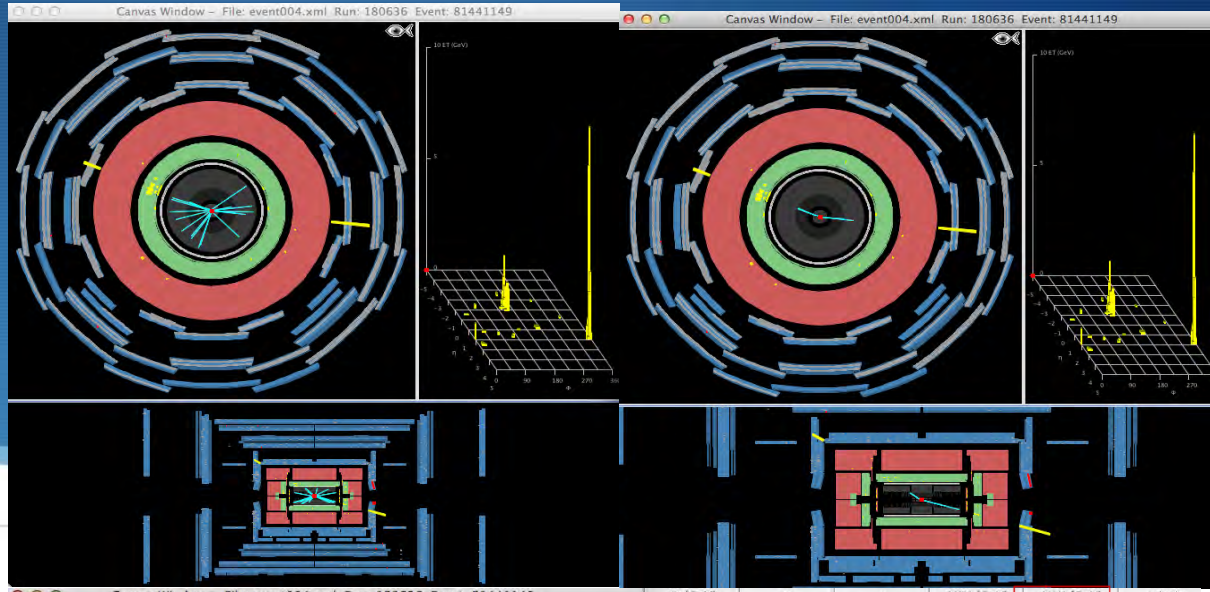




- Data from 2011, 1.1fb-1
  - 350 should be WW (w/o Higgs) 160 should be ttbar or single top 120 should be Z+Jets50 should be W+Jets15 should be from H➔WW

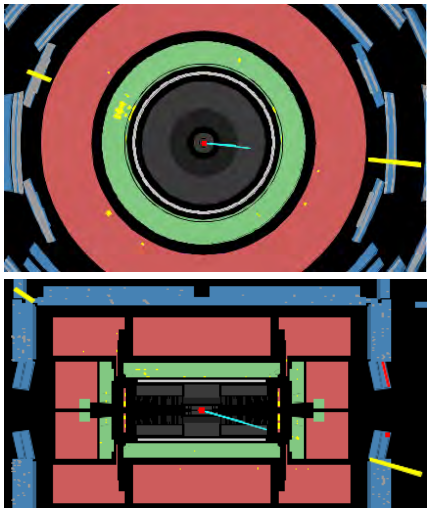
$\gamma\gamma$ or e^+e^-?

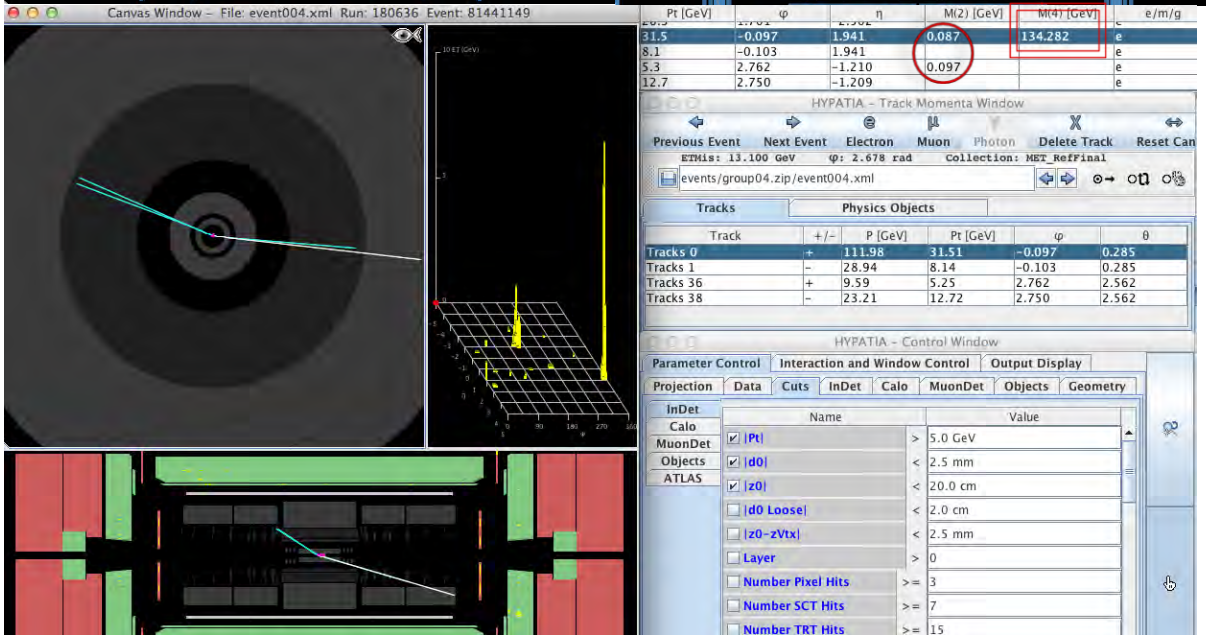
- Left: p_T>1GeV; right p_T>5 GeV
  - 2 apparent tracks pointing to 2 calorimeter objects
- Zoom reveals 2-pairs e^+e^-



Tracks | Physics Objects

Track	P [GeV]	Pt [GeV]	φ	θ
Object 0	111.67	31.42	-0.099	0.285
Object 1	23.58	12.92	2.755	2.562

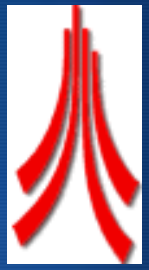




- The conclusion is that the 2 calorimeter objects correspond to 2 photons, which have converted and lead to 4 tracks; the tracks from one pair had less than 3 pixel hits
- So, to be classified and entered as $\gamma\gamma$

Level-2 observations

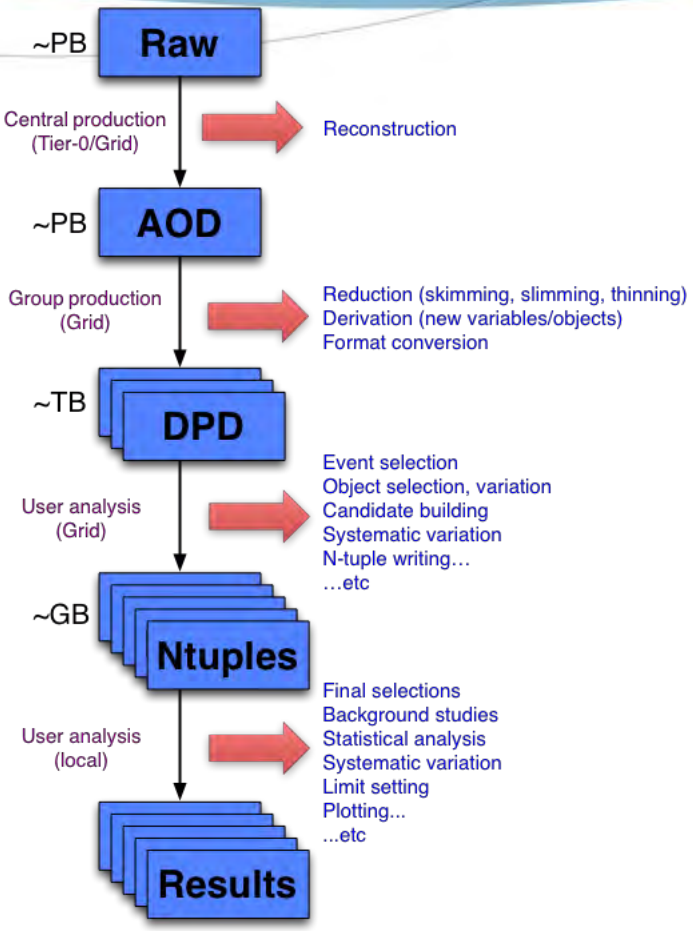
- The applications are all trying to illustrate the analyses and physics in the true context of a detector
- They use ATLANTIS as a presenter in most cases, which defines the natural common format
  - Other formats would require an additional interface, to what benefit?
  - Use case and resource justification for a common format not clear



ATLAS Analysis

Roger Jones

The Generic Analysis Flow



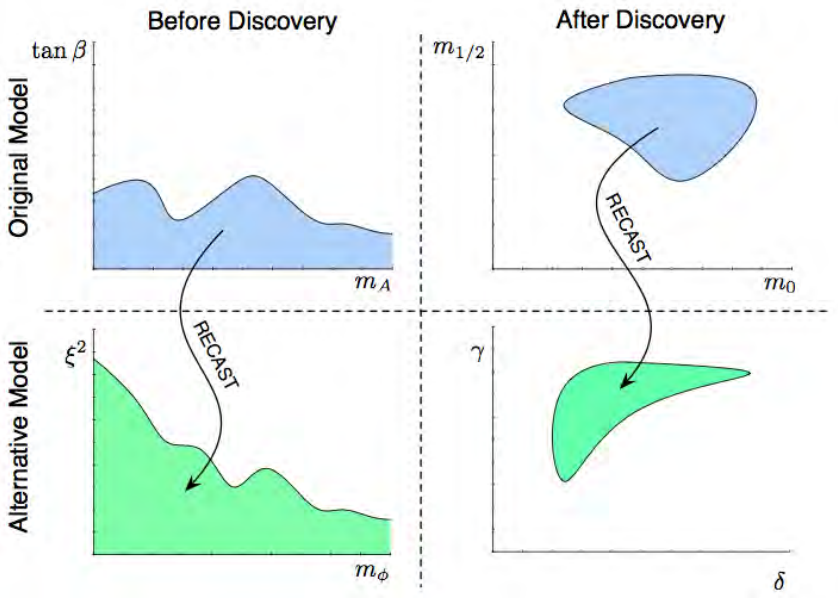
Level 3

- ATLAS has no approved level-3 formats for external use, and such release will require such approval
- We are concerned that anything released be useful, not consume large amounts of collaboration effort (both in production and response)
- As such, tools like Recast are more attractive
  - The information incorporates the efficiency, acceptances and corrections – so is robust
  - It also helps meet the internal requirement of full documentation of analyses

Analysis Practical steps - RECAST

arXiv:1010.2506

- Framework developed to extend impact of existing analyses
- Candidate for within-experiment and long-term analysis archival, encapsulating the full trigger & event selection, data, backgrounds, systematics



- Allow an existing analysis to be reinterpreted under an alternate model hypothesis
  - Complete information from original analysis, including the tacit information, contained in the data
  - Not optimized for the new model, but more reliable than a naïve reanalysis?

Recast seen as a very promising solution for preserving analyses and useful, cost effective preservation of information – addresses levels ~1-~3