

TRIUMF Data Analysis

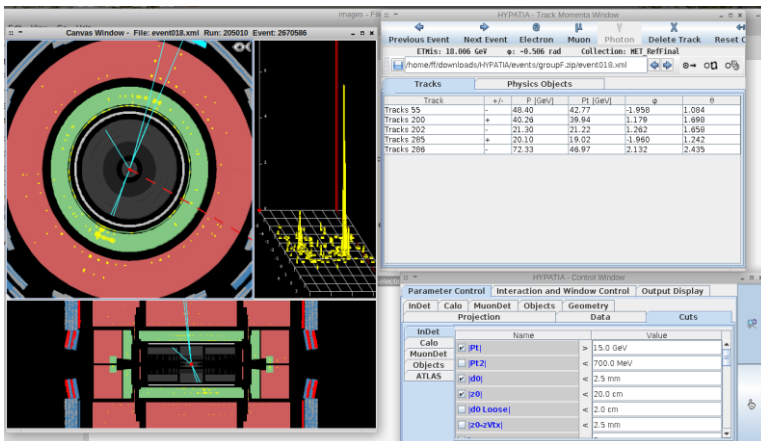
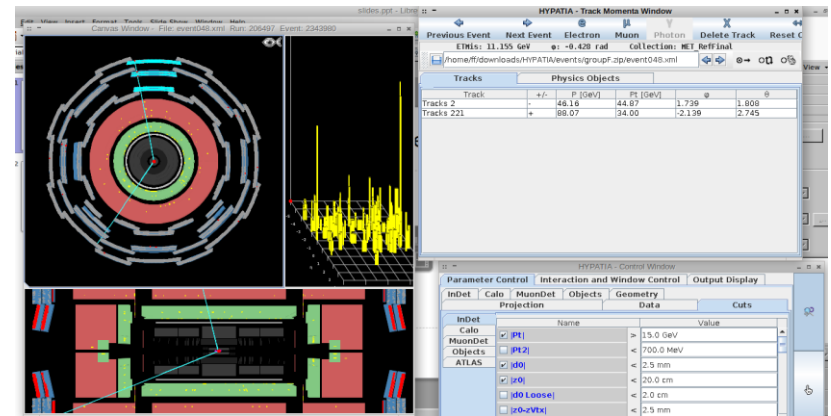


Event Selection

Electron events involve two tracks that each create a cluster in the green EM calorimeter section. In the event that two electrons choose the one with the opposite charge

Muon events involve two tracks going through the detector

4-lepton events may involve two muons going through the whole detector and two tracks with clusters



Event Selection

The screenshot displays the HYPATIA software interface for event selection. The main window is titled "HYbrid Pupils' Analysis Tool for Interactions in ATLAS" and shows a "Canvas Window" with a top view of the ATLAS detector and a 3D view of the event. The top right panel, "HYPATIA - Track Momenta Window", shows event parameters: ETMis: 27.090 GeV, ϕ : -2.149 rad, and Collection: MET_Reffinal. Below this is a table of tracks:

Track	+/-	P [GeV]	Pt [GeV]	ϕ	θ
Tracks 474	+	93.91	75.40	2.566	2.209
Tracks 477	-	34.48	28.11	1.542	0.953
Tracks 480	+	54.48	16.30	-0.377	0.304

The bottom right panel, "HYPATIA - Control Window", shows the "Parameter Control" section with tabs for InDet, Calo, MuonDet, Objects, and Geometry. The "Cuts" section is active, showing a list of cuts with their names and values:

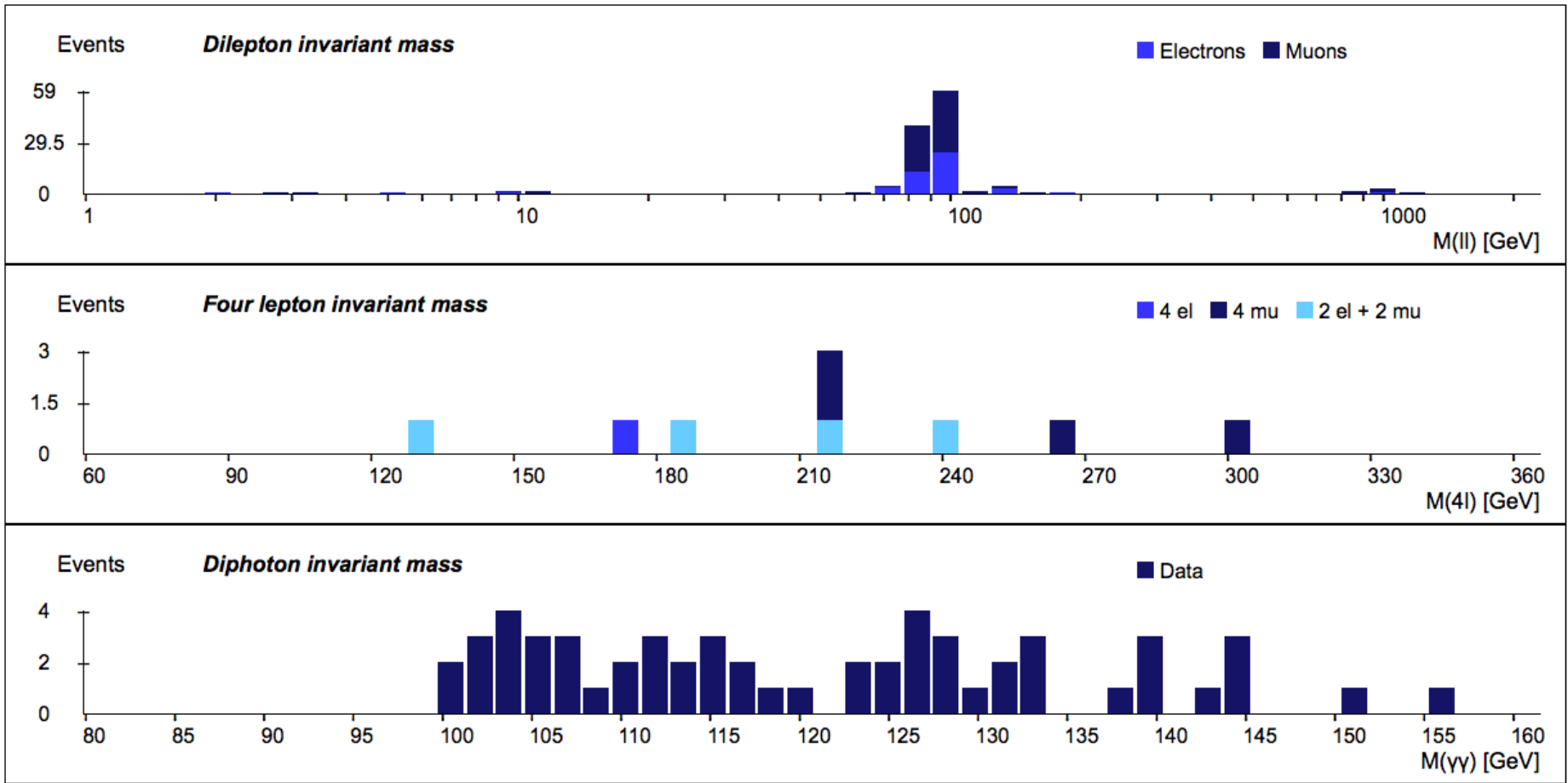
Name	Value
<input checked="" type="checkbox"/> Pt	15.0 GeV
<input type="checkbox"/> Pt2	700.0 MeV
<input checked="" type="checkbox"/> d0	2.5 mm
<input checked="" type="checkbox"/> z0	20.0 cm
<input type="checkbox"/> d0 Loose	2.0 cm
<input type="checkbox"/> z0-zVtx	2.5 mm

Photon events involve two clusters that were not generated by anything that generates tracks.

Final Data from All Groups

OPlot – MasterClass – Combination for TRIUMF on 2014-04-05

Start Student Moderator Tutor Administrator



Bins:

Default values

- See Z boson
- Why is there a 1000 GeV and 10 GeV dilepton event?
 - Error?
 - Z-boson: Z' postulated in theories
 - Upsilon meson: b quark-antiquark meson