Looking at Sherpa and Pythia8 Background MC Samples

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Sample Selection

- I chose to use a Sherpa background sample and compare it to the background from the Pythia8 sample.

- The same cuts were applied to both. This ensured that I could look at the differences between both MC's that had the same 105-160 GeV m_yy cut applied to them.

Event Selections

- I am starting on hh→bbyy analysis which what motivated me to make the following event selections.
- For all events in both of the samples, I chose to look at events where the Hgam preselection is passed and the events have 2 or more jets inside them and exactly 2 photons.
- We only want to look at the small number of events that pass our event cut criteria. After we apply the cuts, we are only left with events that are of interest to this analysis.
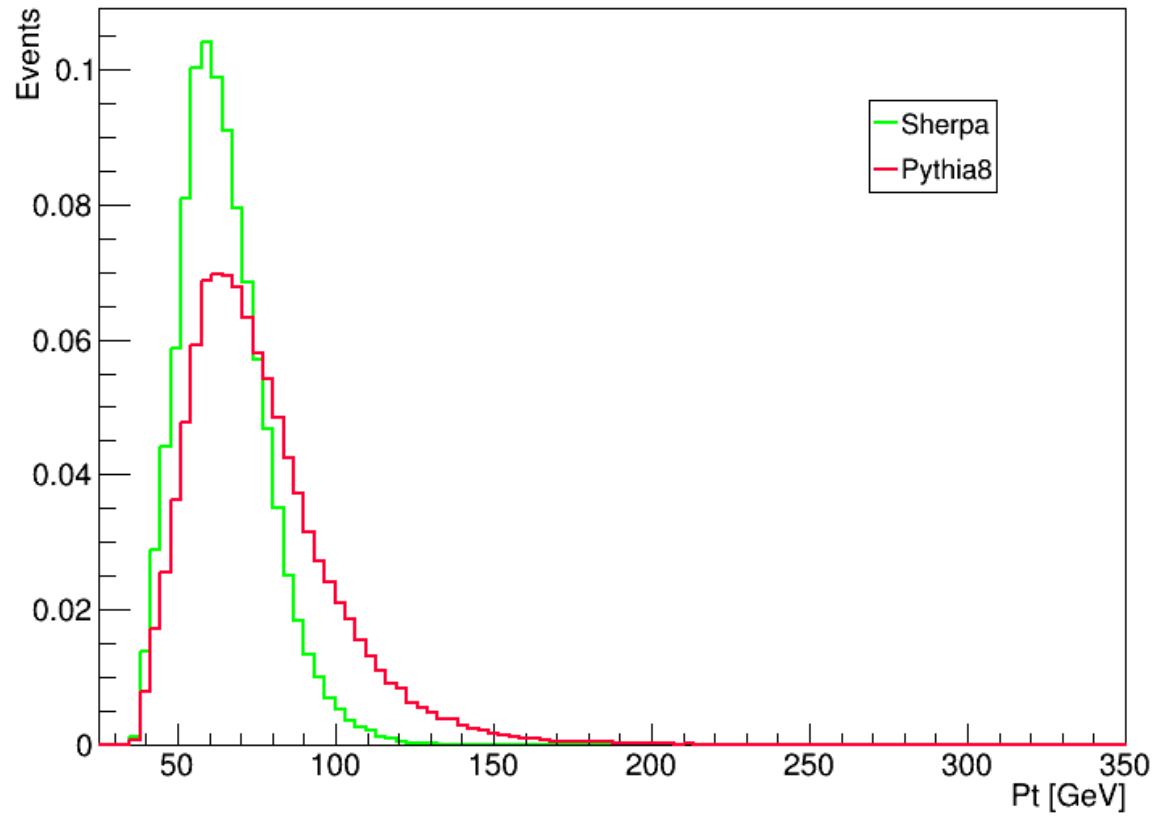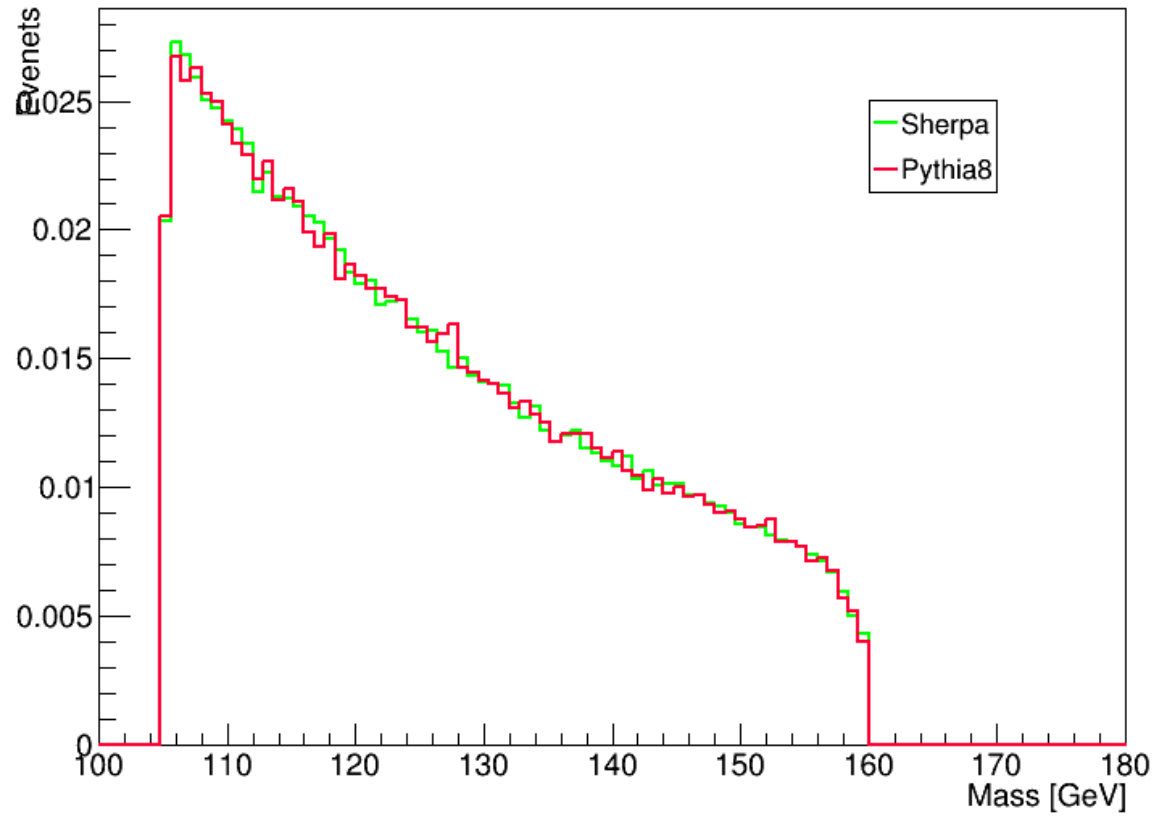
Highest Pt Photon

Both samples were normalized to 1 in this histogram.
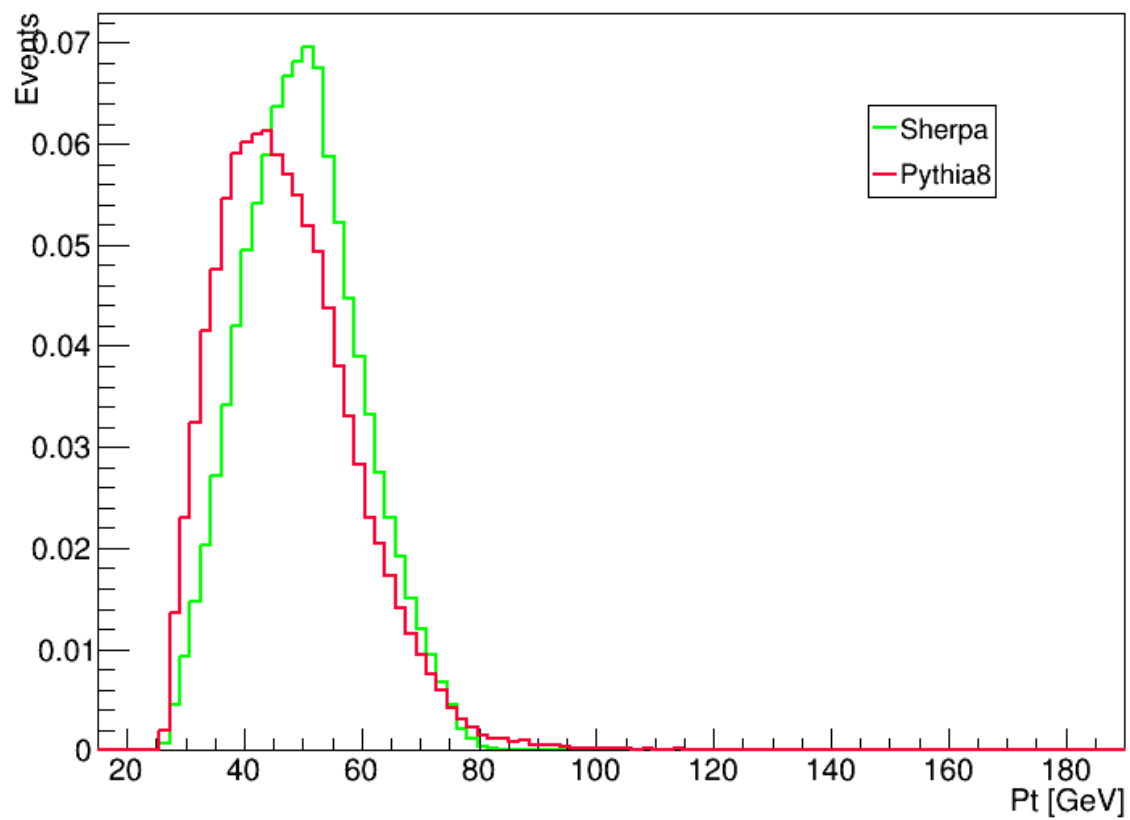
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Backup Slide

- Hgam Passed:

1 = events in xAOD, 2 = events in DxAOD, 3 = all events in MxAOD, 4= No Duplicates, 5 = trigger, 6 = GRL, 7 = detector DQ, 8 = has PV, 9 = 2 loose photons, 10 = e/γ ambiguity, 11 - Trigger Matched, 12: tight photons, 13 = isolated photons, 14 = relative ET cuts, 15 = 105 < myy < 160 GeV