

Table of Contents

AB E-Group Discussions.....	1
Egamma (including Photons).....	1
Electrons PID.....	1
Electron from Conversions and.....	1
Photon PID.....	1
and all that.....	1
W and Z.....	2
Prun and Pathena.....	2

AB E-Group Discussions

Egamma (including Photons)

Electrons PID

Electron from Conversions and

Thread **isRobustMedium and conversions:**

Currently the conversion veto happens at tight: Both the cut on nBlayer and the isConv bit check. The robustMedium adheres to this standard.

cheers john \sqrt{s}

since the top group appears to be focused on similar concerns: after medium cuts for most analyses, the hadrons dominate the background so conversion rejection does not significantly decrease the overall fake rate from jets. You can also decide, as top egamma liaison did, to add the B-layer requirement etc ... to look for yourself. As John knows very well himself, the only analysis which I know of to-date which would be really improved in terms of QCD background by incorporating highly efficient conversion rejection to medium cuts is that involving W/Z + gamma events as SM backgrounds since the real gamma to jet ratio in these topologies is almost 10 times higher than in inclusive events.

Daniel

Photon PID

and all that

Thread **Robust tight cut on PAU ntuples:**

The real point is: is there a real need to develop a new "loose" menu? The present implementation is already rather loose, apart maybe in the eta bin between 1.81 and 2., and the efficiency reduction predicted by the fudge-factor analysis for the loose selection is pretty small everywhere (I can quantify better, if needed). Should anyone decide to explore this direction, please be very careful wrt the trigger definition: at least for the first data periods the current "loose" offline implementation replicates the g10_loose trigger selections: if you want to go looser than that with that data, you should use a different trigger selection (e.g. L1 EM3).

Let me know, ciao, M.

Ciao Daniel,

*> I'm confused when you say that photon robust loose would not bring
> back much efficiency since it was implemented in the trigger once we
> saw before ICHEP that ~ 10% of the high-pT electrons were lost
> because of the loose cuts being too tight.*

What I was trying to say is that, for all data taken before the trigger g10_loose thresholds were loosened, one cannot relax the photon loose cuts anymore without using a different trigger selection that would be unbiased.

*> Martin reminded me that the photon loose cuts are actually looser
> than the electron loose cuts were but I have no idea about robust
> loose.*

The photon loose cuts are not p_T dependent: at least in their first incarnation (e.g. before the electron cuts changed) they corresponded - if I'm not mistaken - to the electron loose cut in the 20 GeV p_T bin. This fact already made them globally looser than the electron loose cut, and with respect to the mismatch in the data/MC shower shape, already more "robust" (again, apart from the eta bin between 1.8 and 2, where the Reta photon loose cut is set at 0.932, thus pretty "tight" with respect to the Reta distribution seen in data).

When the photon "robust" tight was developed, we paid attention not to relax the cuts on R_{η} and w_{η^2} more than the corresponding photon loose selection. We had no problem since the "relaxing" shifts we were applying (corresponding to the mean shift observed in Data and MC) never led to thresholds looser than the loose cut ones (again, apart from the infamous 1.8-2 bin). In this respect, the current loose cut implementation can be considered at least as robust as the current "robust tight" selection (than one might argue that the "robust tight" selection can be made more robust, but this is another issue).

> So I've been arguing (perhaps mistakenly) with the diphoton exotic group that using a robust loose photon selection if they end up using loose photons in the analysis would gain efficiency and avoid questions from the egamma side about systematics.

My opinion is that they can safely use the current loose implementation, and the the systematic uncertainties would be rather small, or in the worst case of the order of the one for the robust tight. Again, apart from the 1.8-2 eta bin, for which a special treatment might be needed.

Hope this helps to clarify a bit the situation.

Ciao, M.

Thank you Marco ... yes, this does indeed clarify everything I believe:

1) For the UED diphoton analysis, the g_{10_loose} trigger is not really so important because they consider only photons with $ET > 25$ GeV, so can surf on the L1 EM trigger until the loose cuts were actually made robust loose in the trigger.

2) For $abseta < 1.8$, the photon loose cuts are as robust in terms of R_{η} and w_{η^2} cuts as the robust tight

This means that the loose-loose diphoton analysis should not suffer from any unexpected significant inefficiency in data beyond that measured eg for electrons from W decay.

Many thanks for having clarified this! Daniel

W and Z

Prun and Pathena

-- AndreaBocci3 - 01-Sep-2010

This topic: Main > ABEgroupDiscussions

Topic revision: r3 - 2011-06-04 - AndreaBocci3



Copyright &© 2008-2019 by the contributing authors. All material on this collaboration platform is the property of the contributing authors.

Ideas, requests, problems regarding TWiki? Send feedback