Some more Work on ZH -> mumubb

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ZH->llbb Meeting
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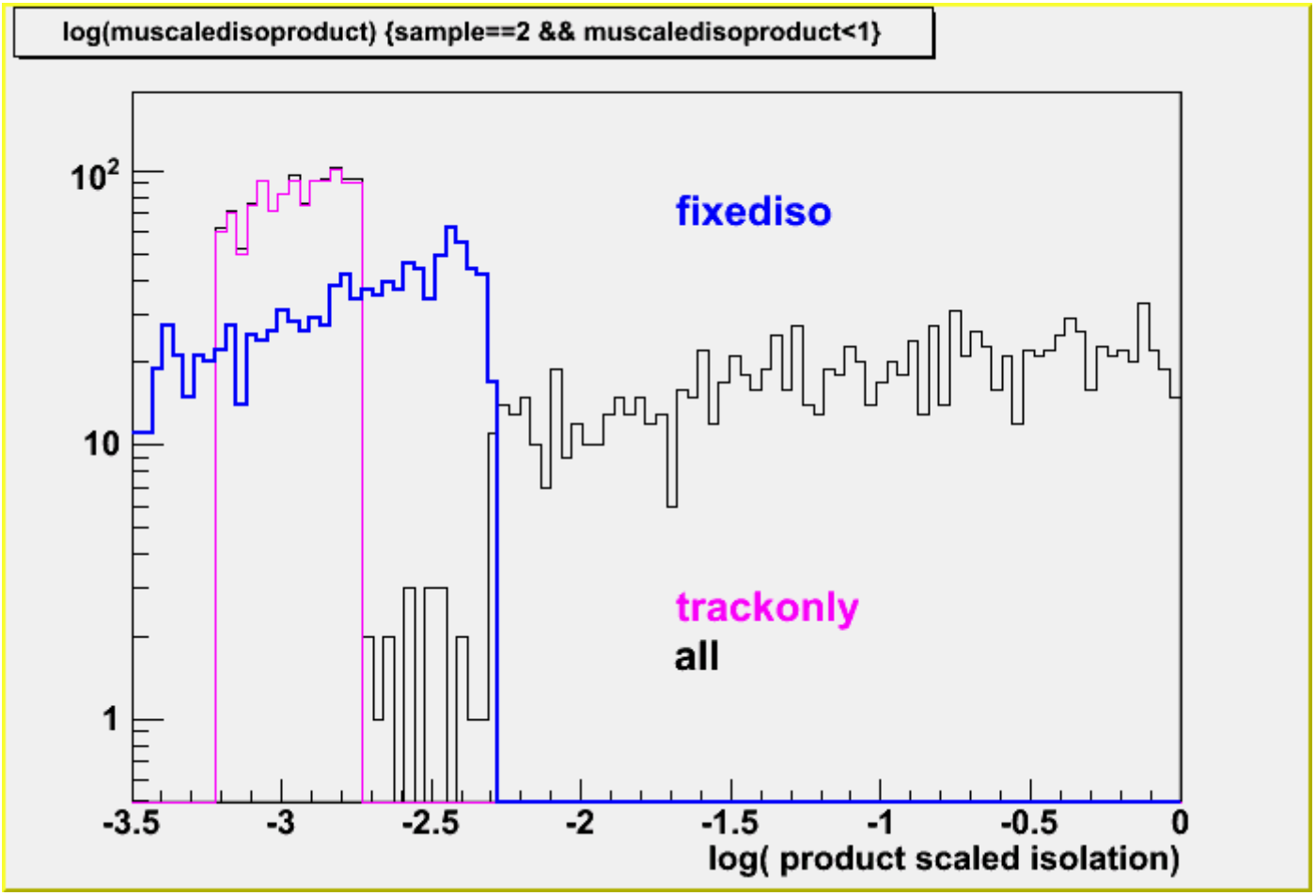
QCD "Isolation"

QCD isolation is flat

Extrapolate into "isolated region"

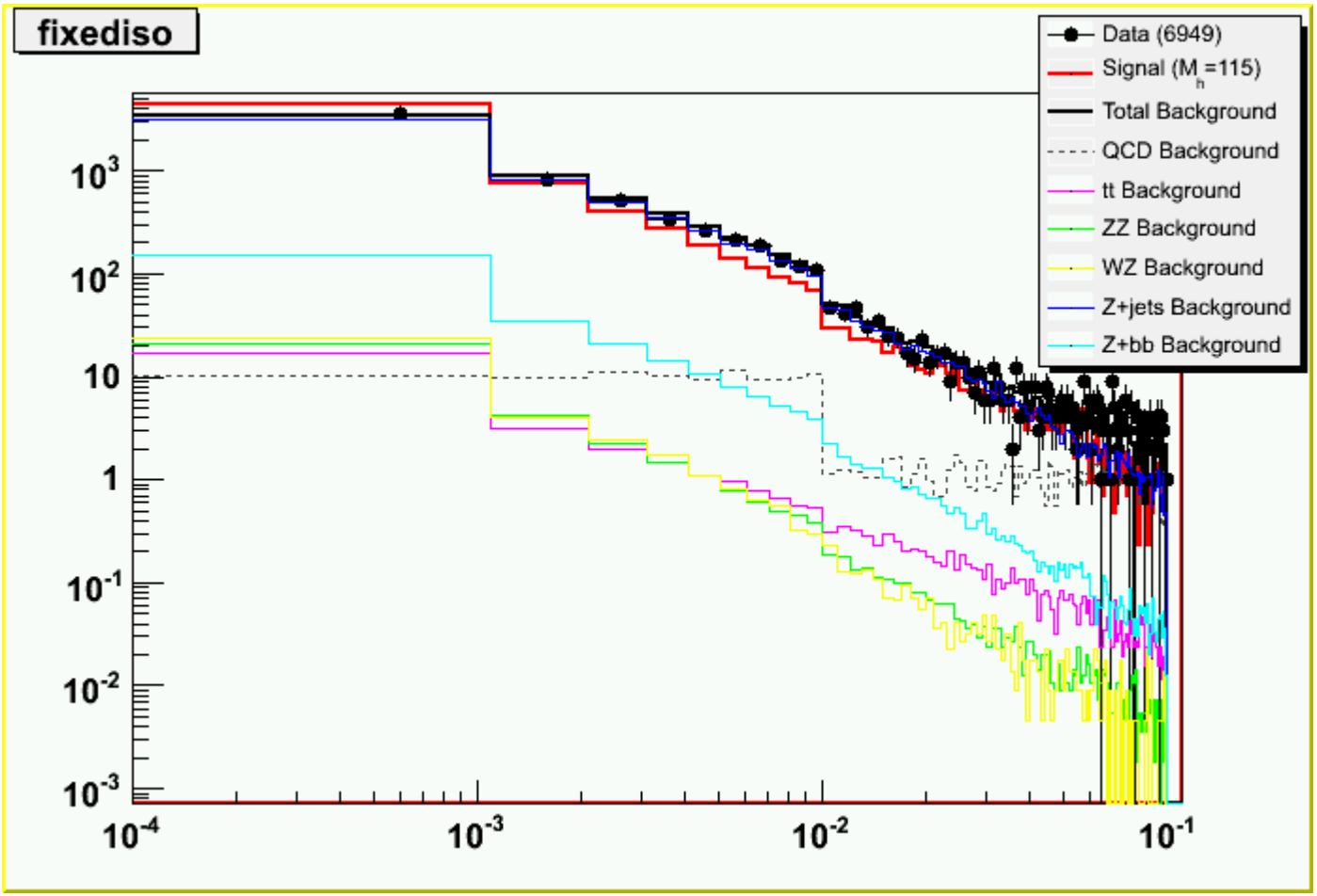


QCD "Isolation"

Choose a flat random number for QCD isolation

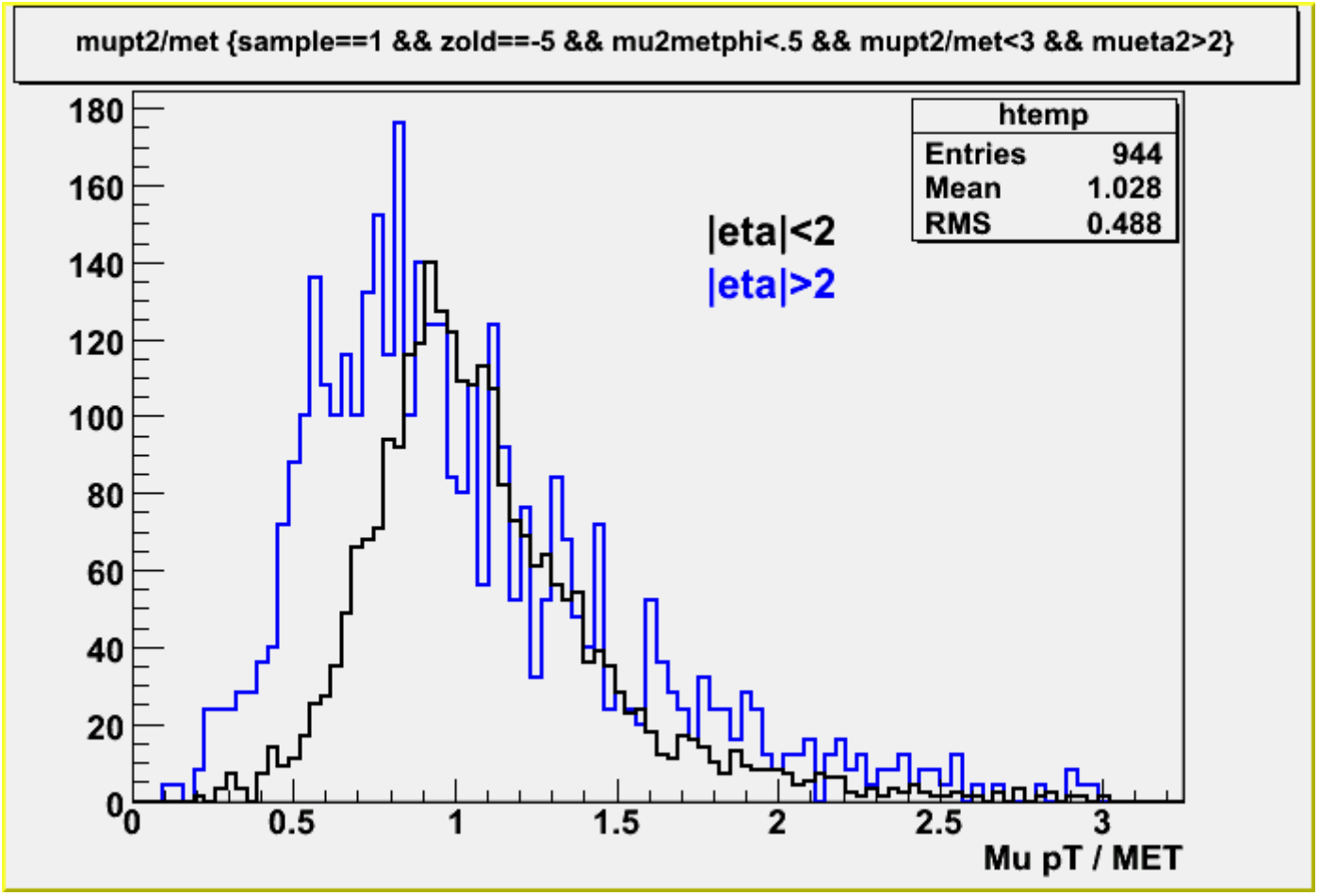
Can now use in NN directly

Well-modeled



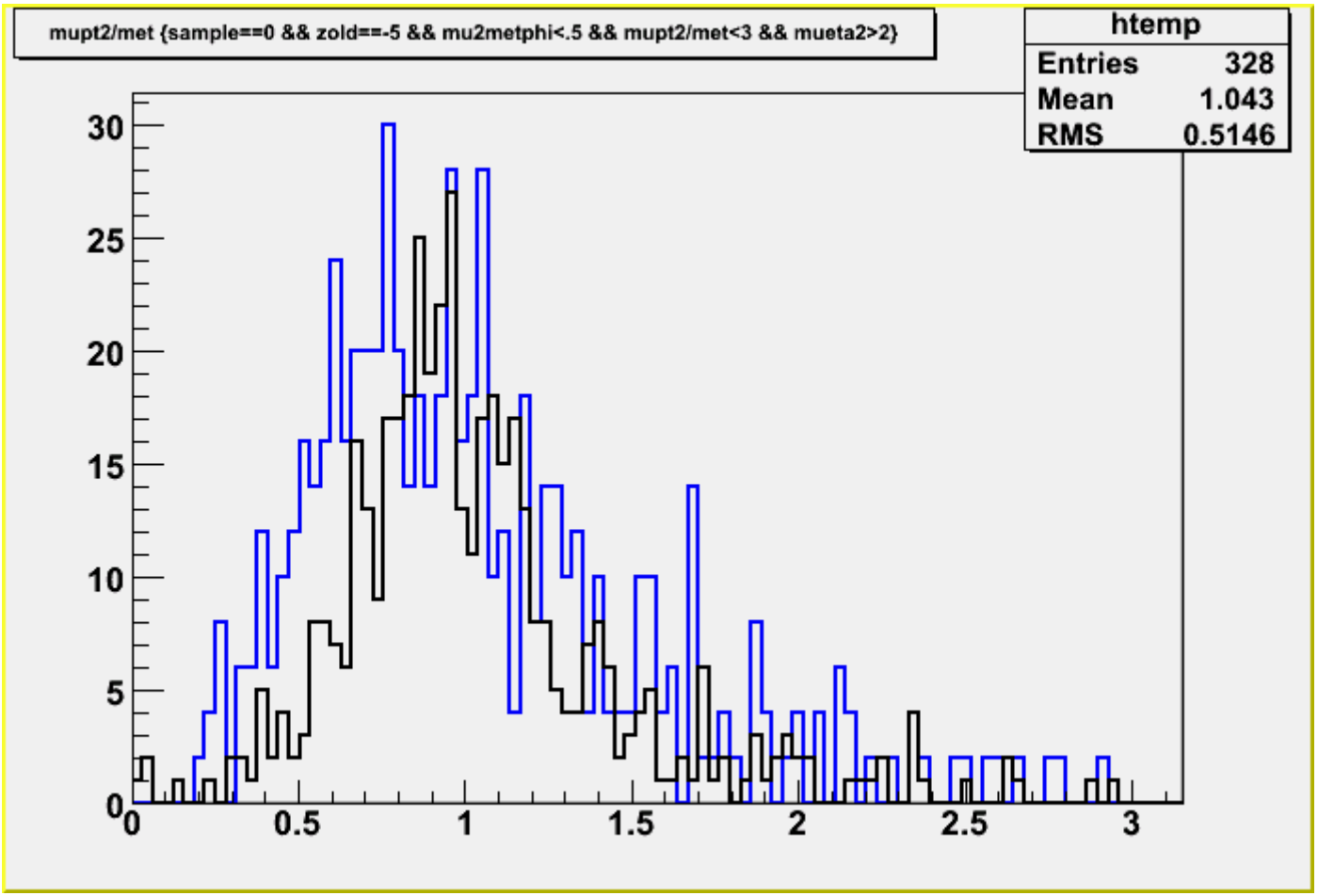
MET in track-only Z events

Resolution is worse
in the forward region



MET in track-only Z events

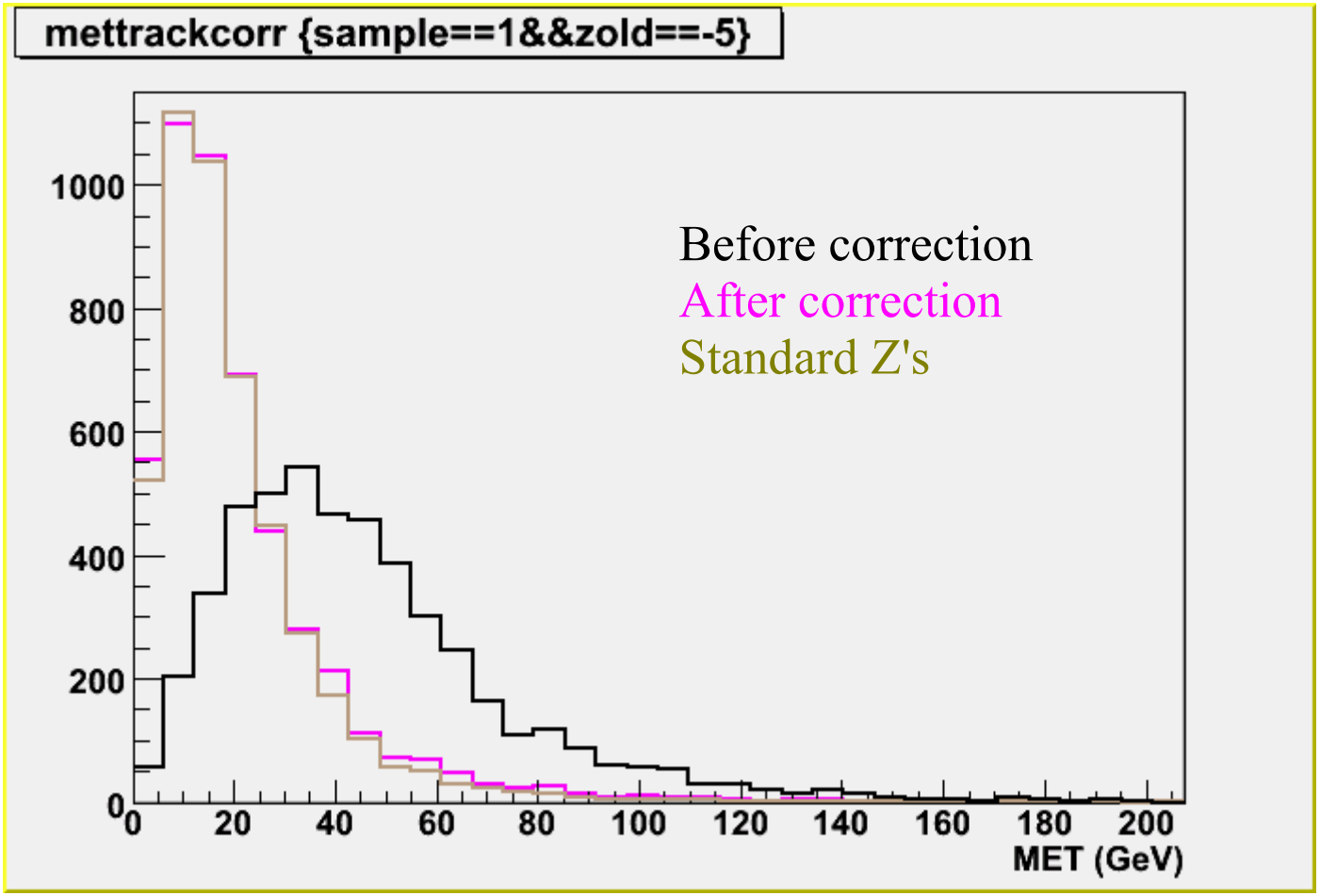
Can see the same effect in data



MET in track-only Z events

Can correct the MET magnitude (and direction) for this track

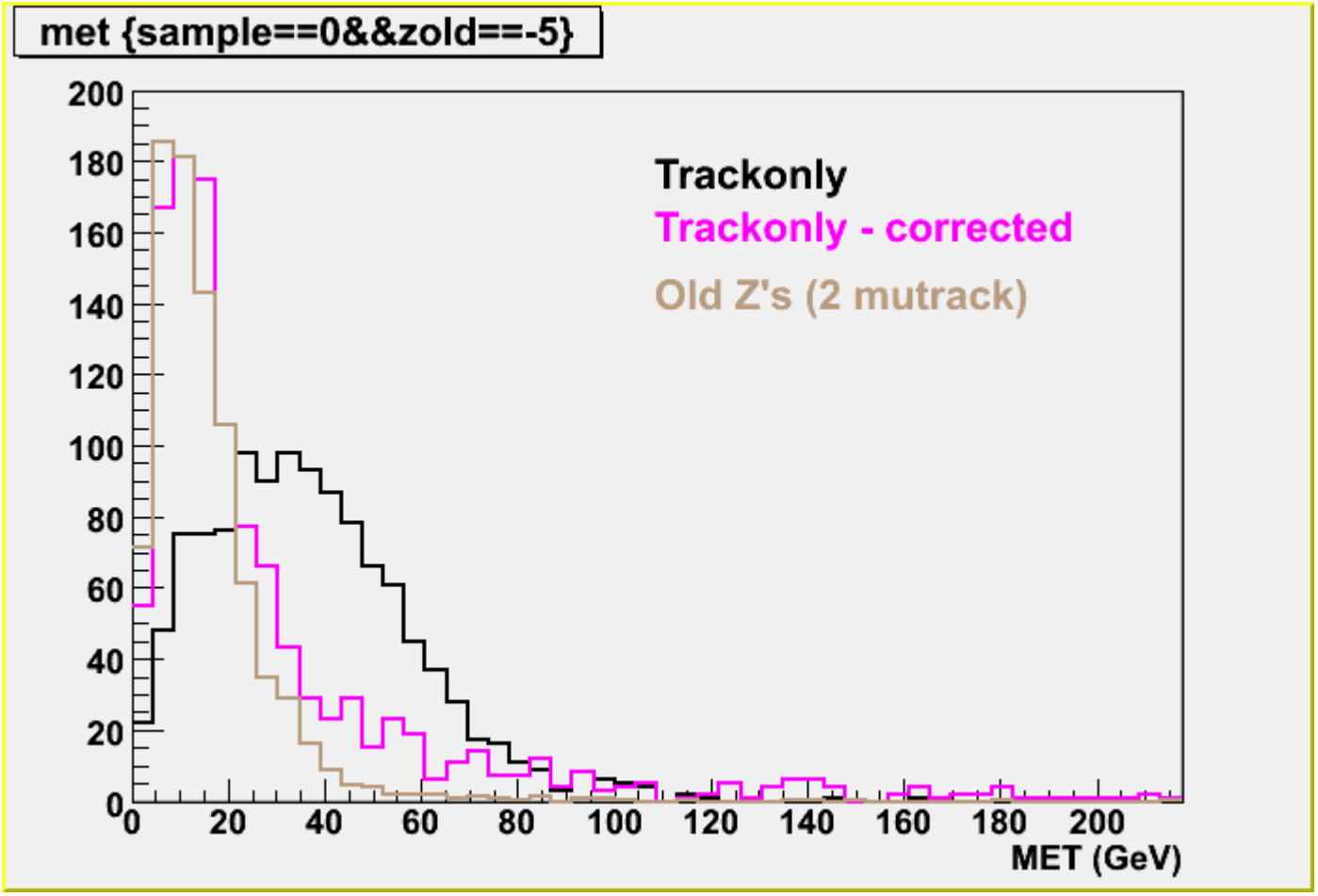
Resolution in these events is then the same as in other Z event types



MET in track-only Z events

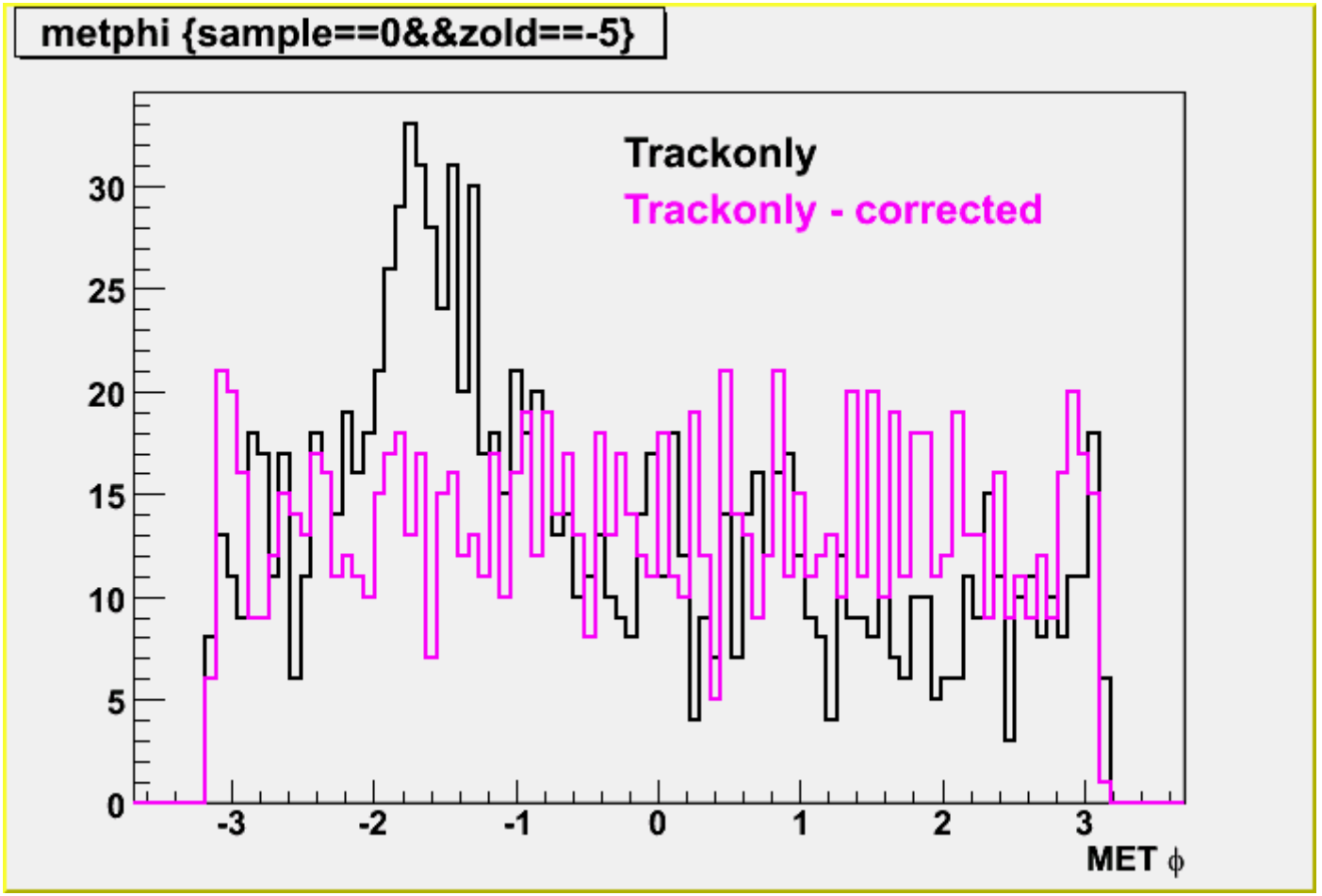
Works just as well in data

There's some contamination from non-Z events (QCD, tt)



MET in track-only Z events

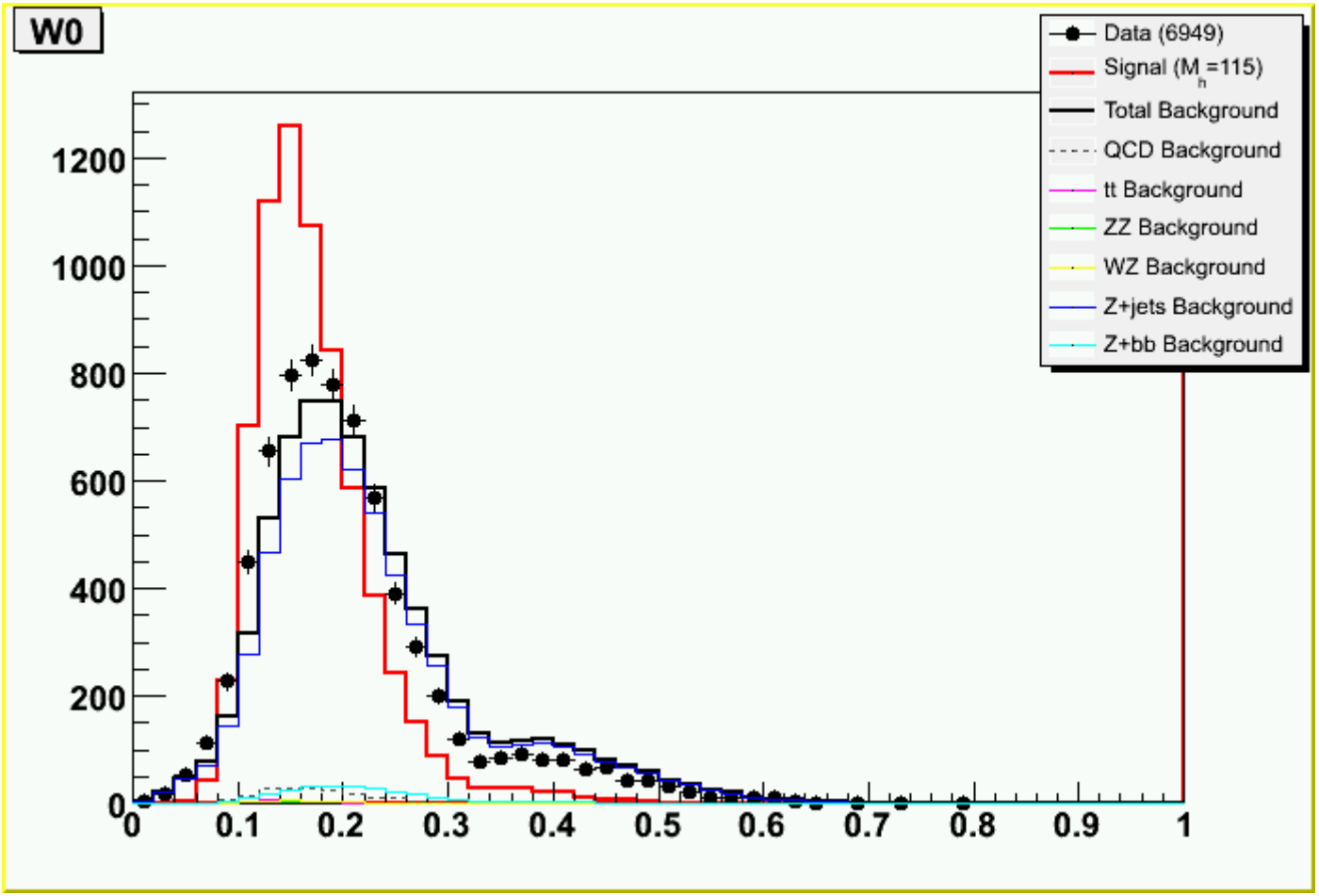
The angle of the MET
is now symmetric in phi!



Jet Width

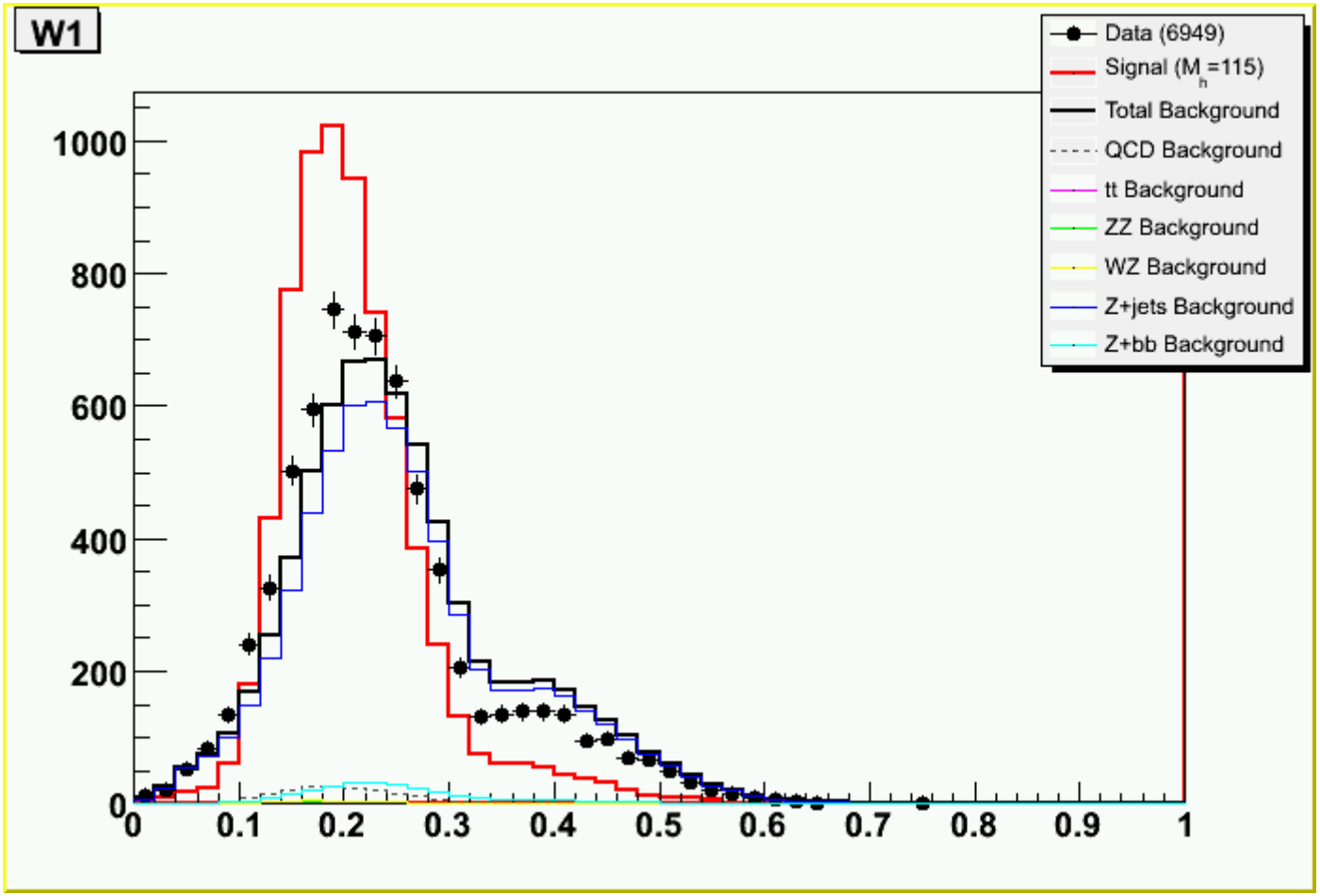
Jet width is pretty well-modeled

Seems different between signal and background!



Jet Width

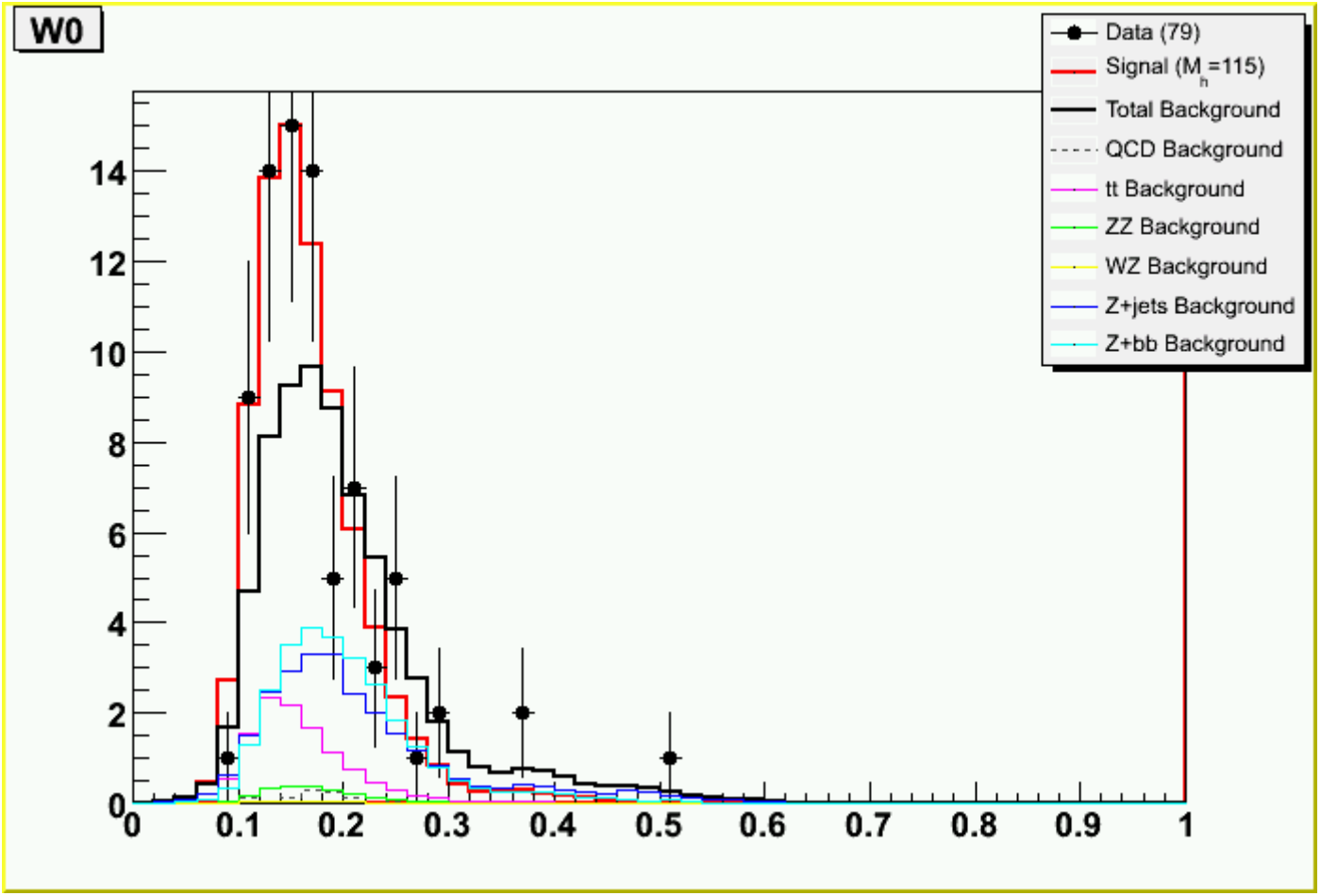
Same for second-leading jet



Jet Width

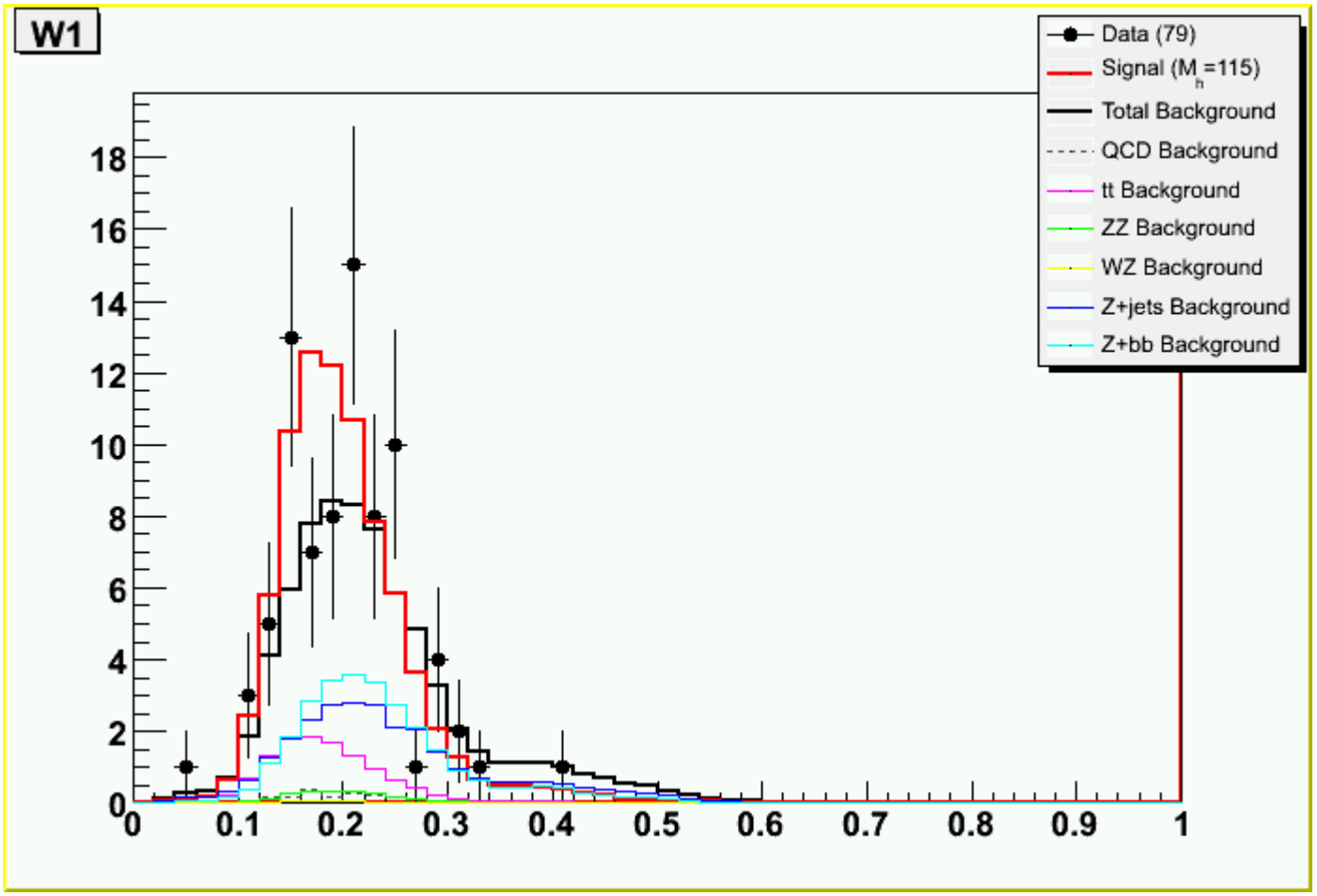
Difference persists after b-tagging

What physics causes this? gluons vs. light-jets?



Jet Width

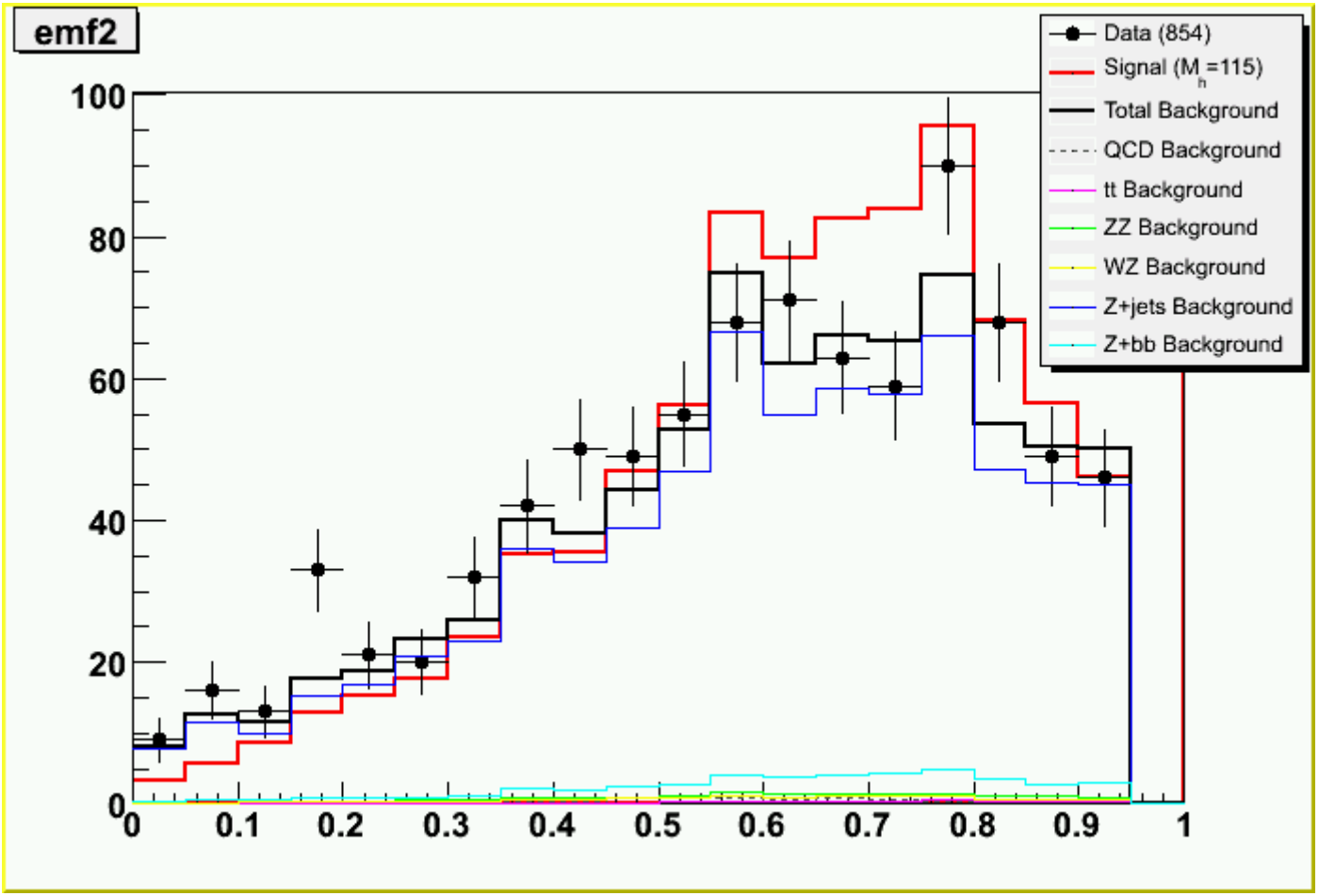
Same for second-leading jet



Jet EM Fraction

Jet EM fraction is pretty well-modeled

Seems different between signal and background!



Jet EM Fraction

Difference persists after b-tagging

What physics causes this? b-jets with electron decays?

Note that Z+bb has similar shape as signal, whereas Z+light does not!