

First look at trigger with $B \rightarrow hh$ decays

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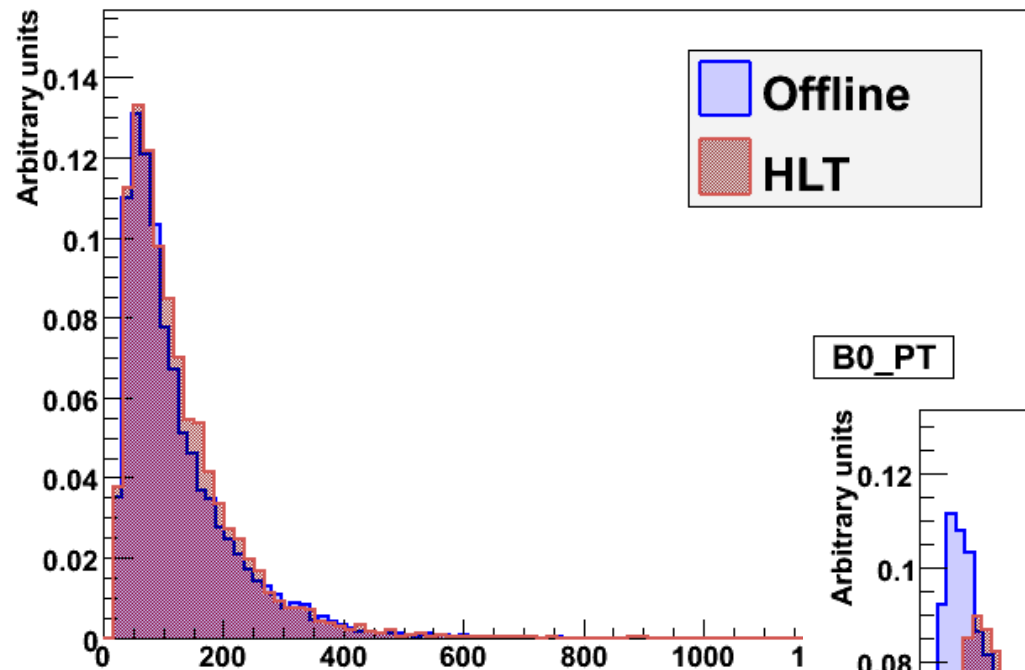
LHCb CP Measurements WG meeting, CERN, 15 April 2008

A collection of distributions!

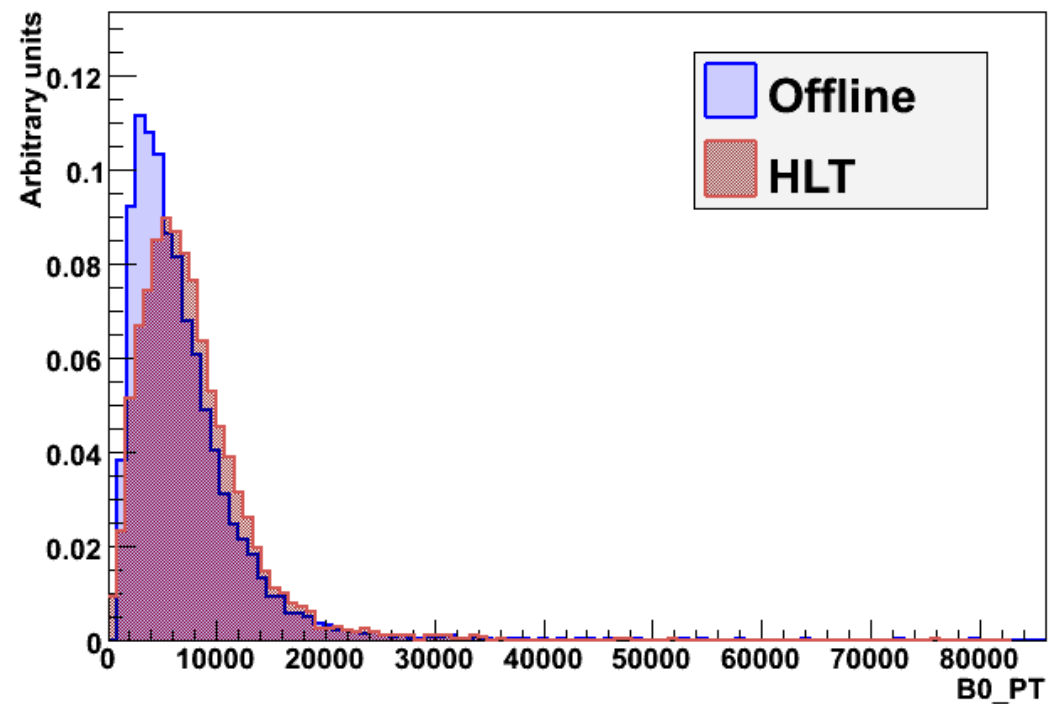
A blue bracket pointing downwards from the word "distributions" in the line above.
many

Momentum OK. But some bias in angles, vertexing?

B0_P

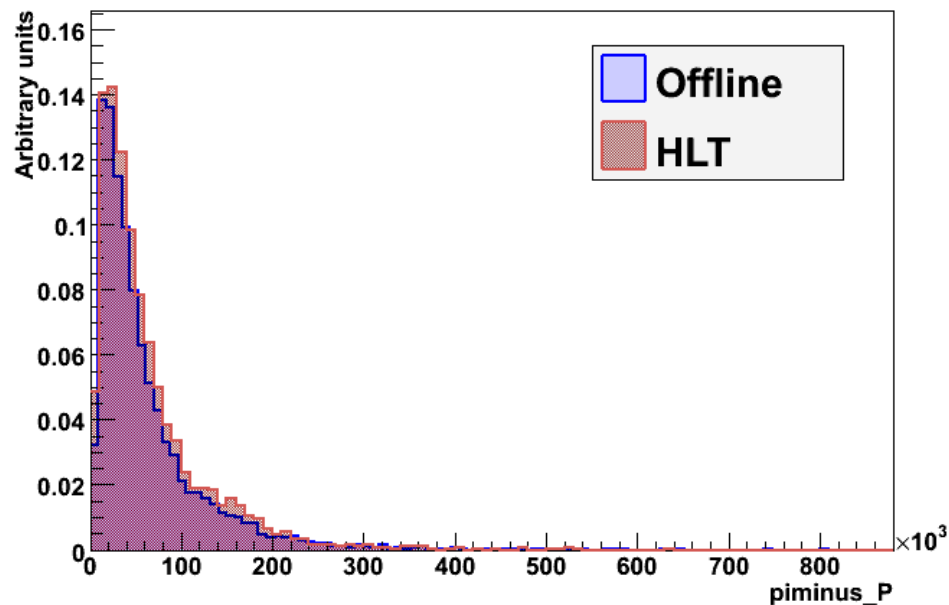


B0_PT

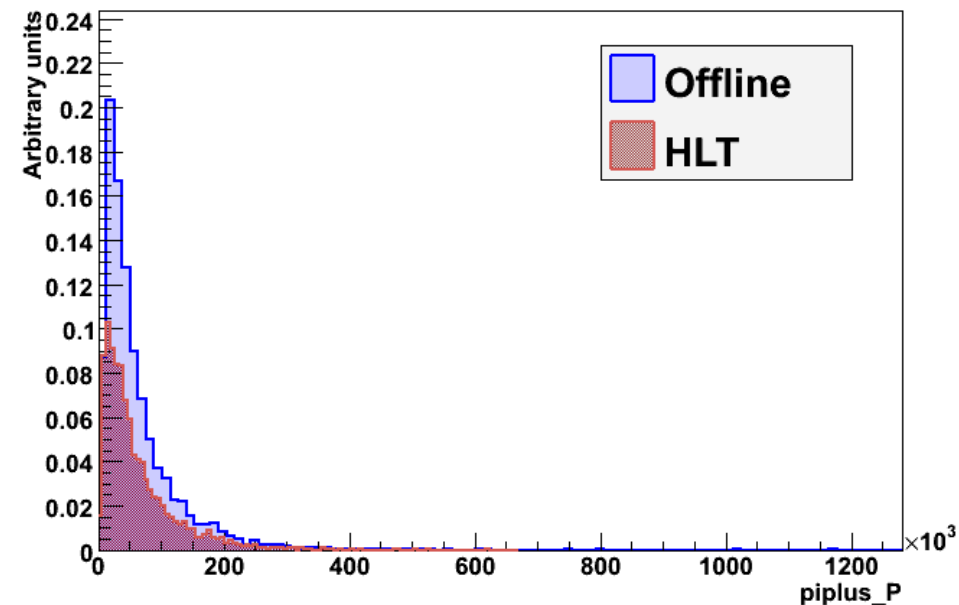


Differences between positive and negative tracks?

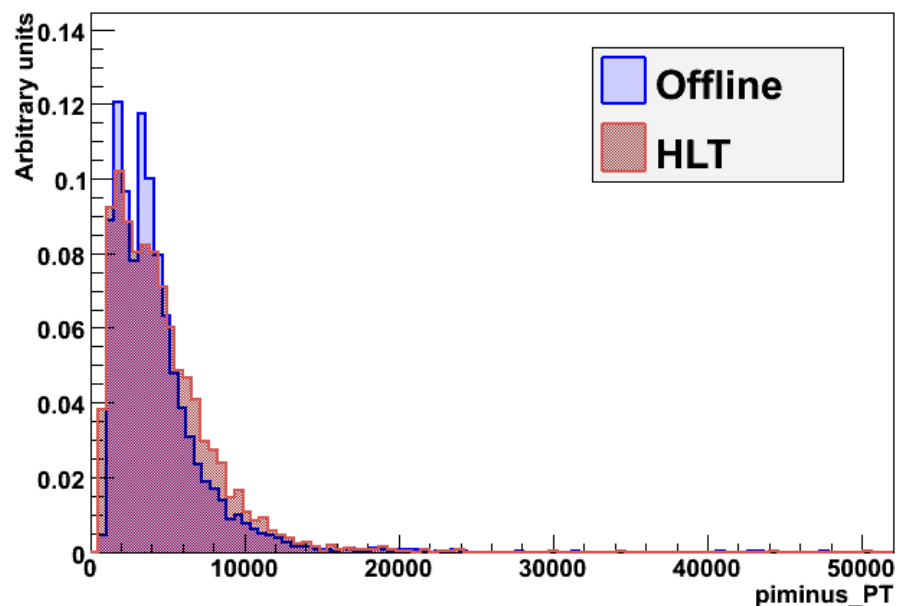
piminus_P



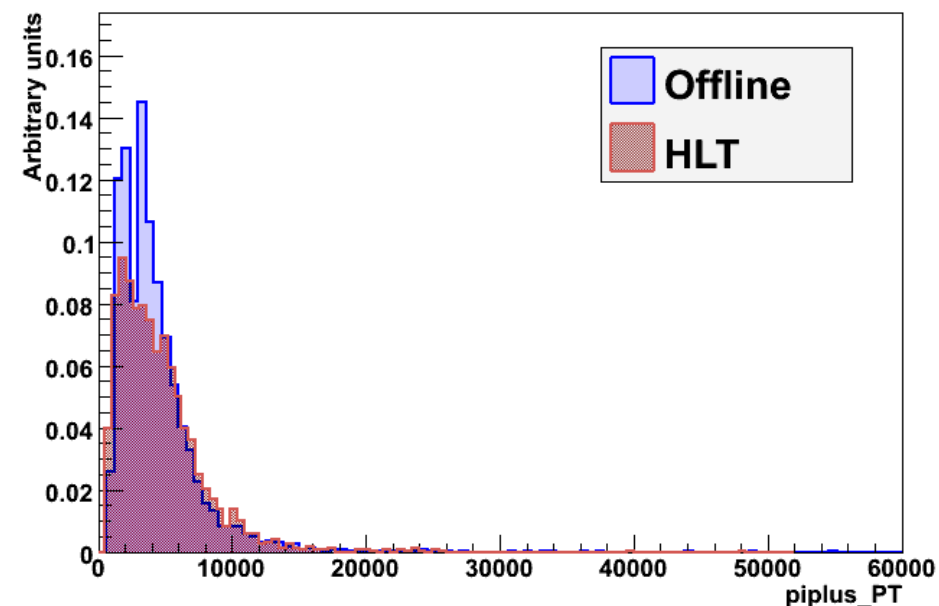
piplus_P



piminus_PT

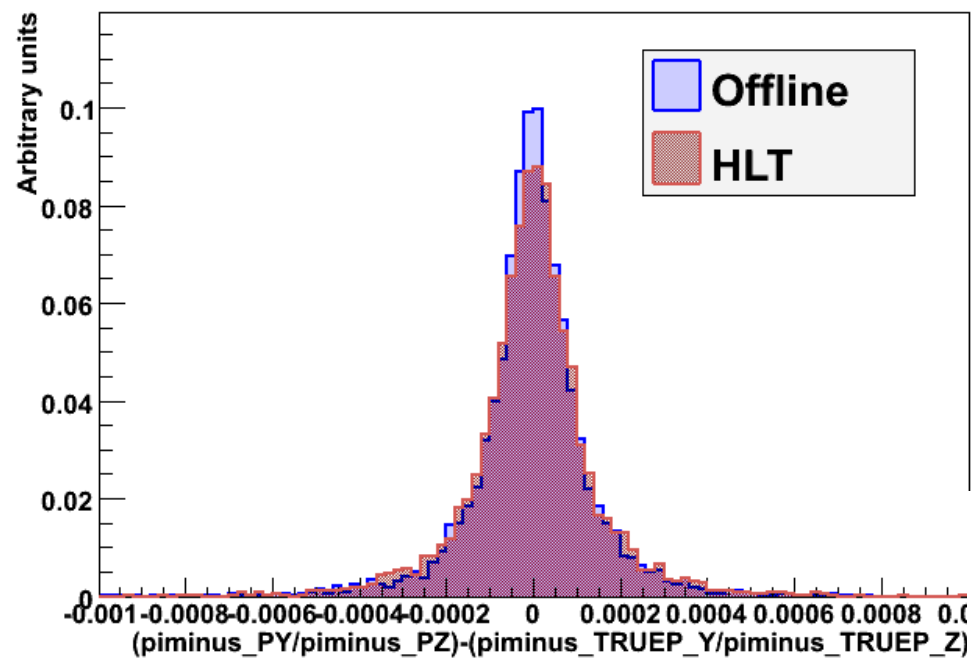


piplus_PT

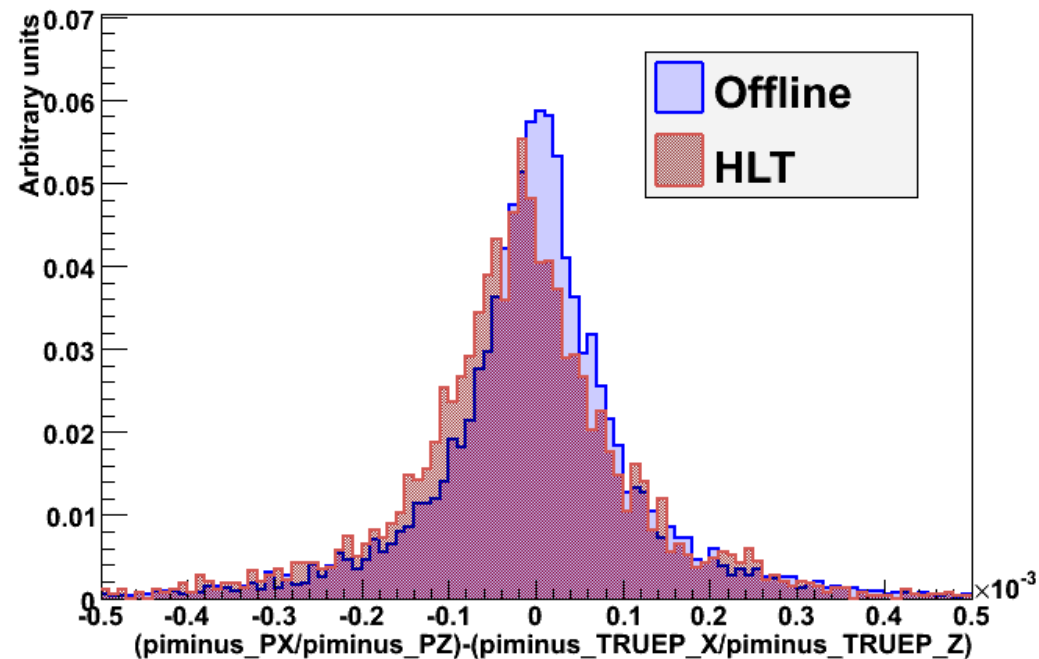


Tracks slopes: OK in y, little bias in x

$(p_{\text{minus_PY}}/p_{\text{minus_PZ}})-(p_{\text{minus_TRUEP_Y}}/p_{\text{minus_TRUEP_Z}})$

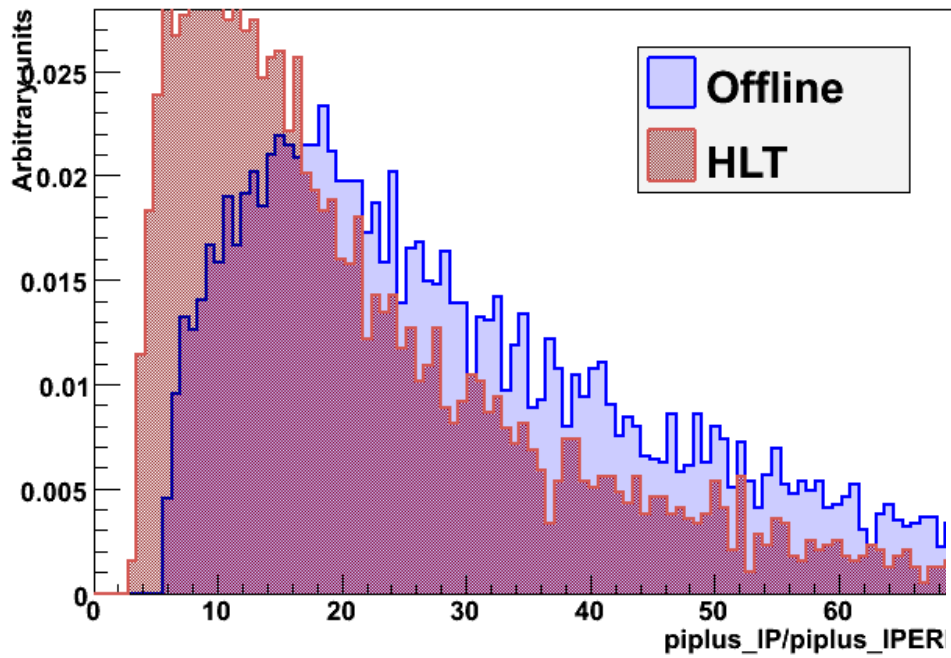


$(p_{\text{minus_PX}}/p_{\text{minus_PZ}})-(p_{\text{minus_TRUEP_X}}/p_{\text{minus_TRUEP_Z}})$

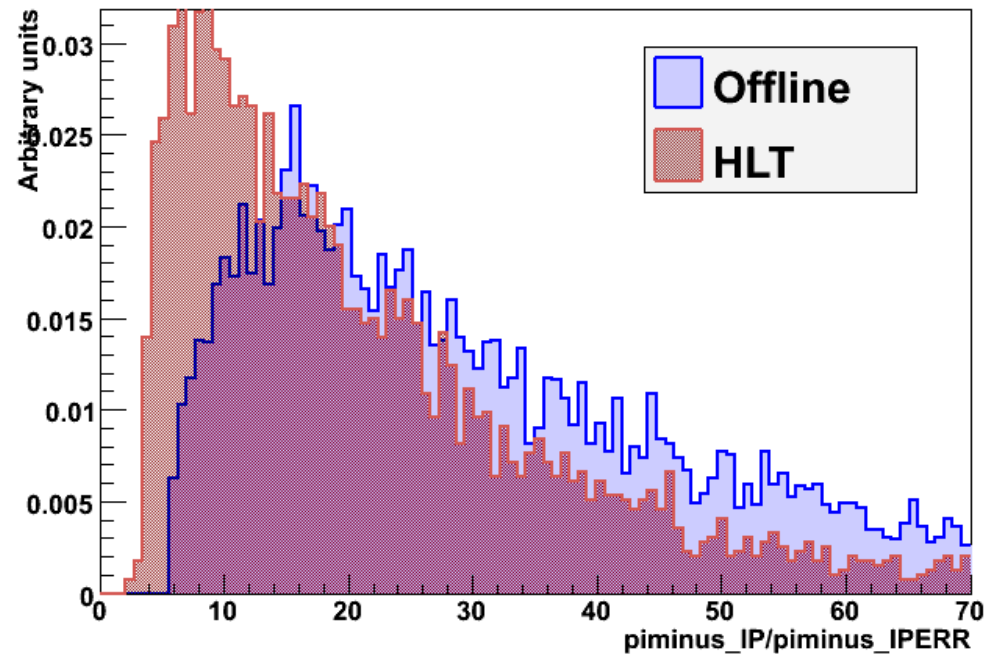


Particles IP significances

piplus_IP/piplus_IPERR

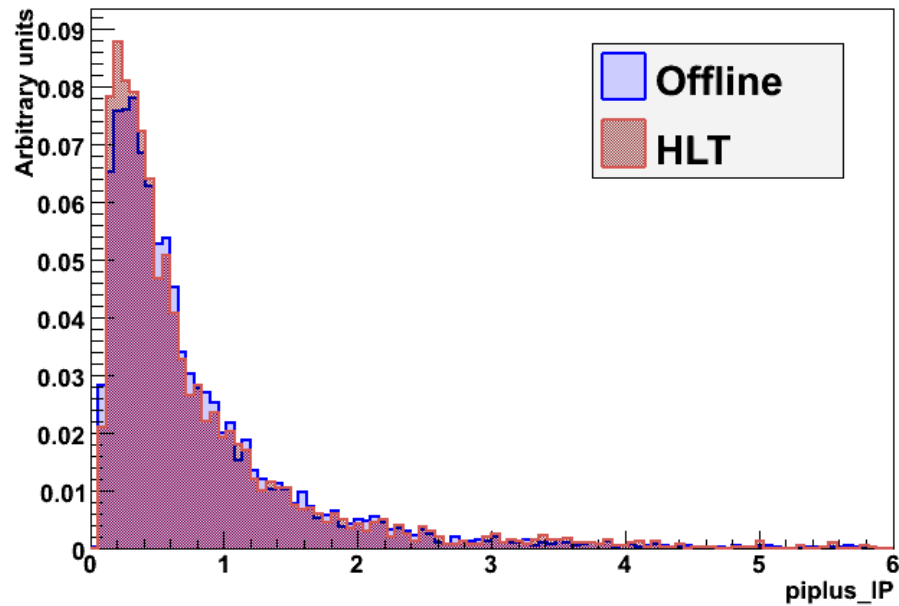


piminus_IP/piminus_IPERR

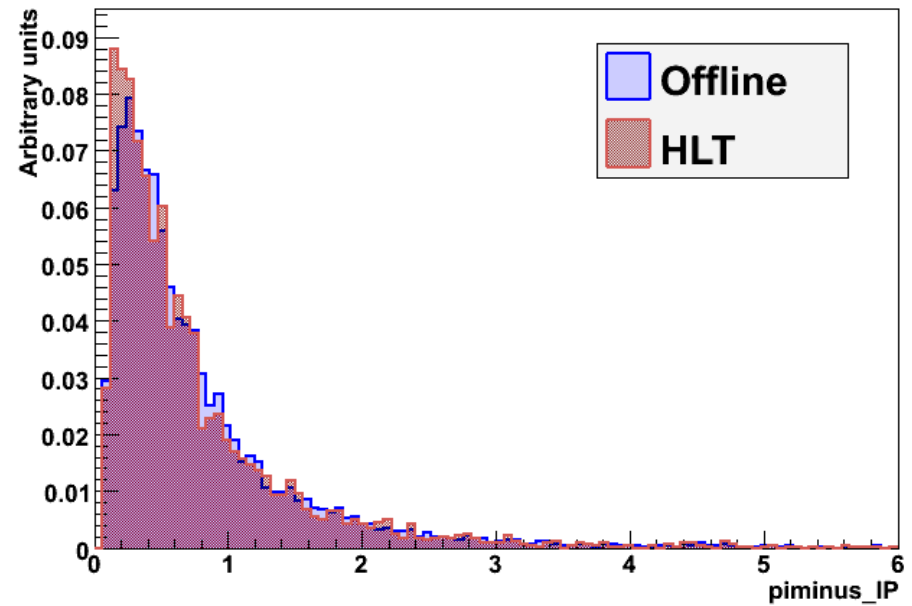


Particles IP values and errors: hmm ...

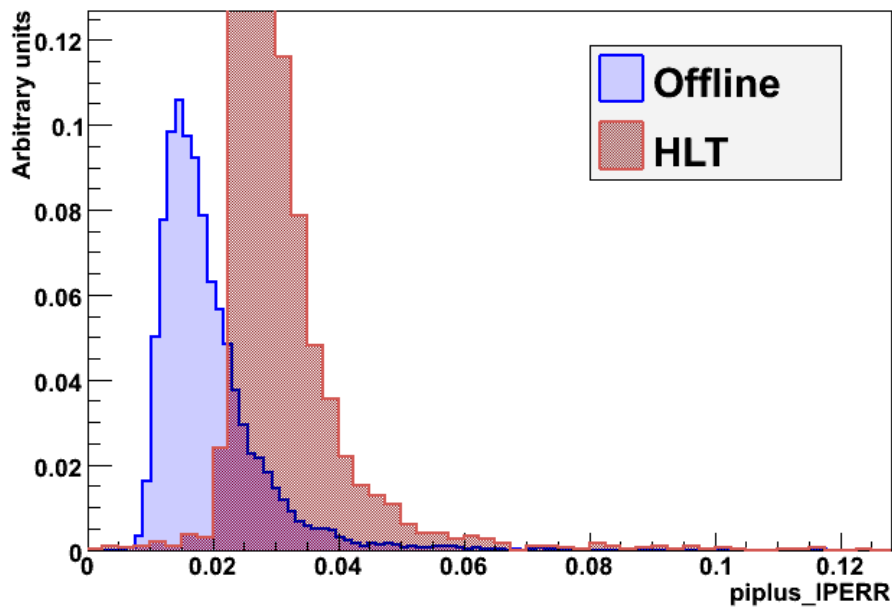
piplus_IP



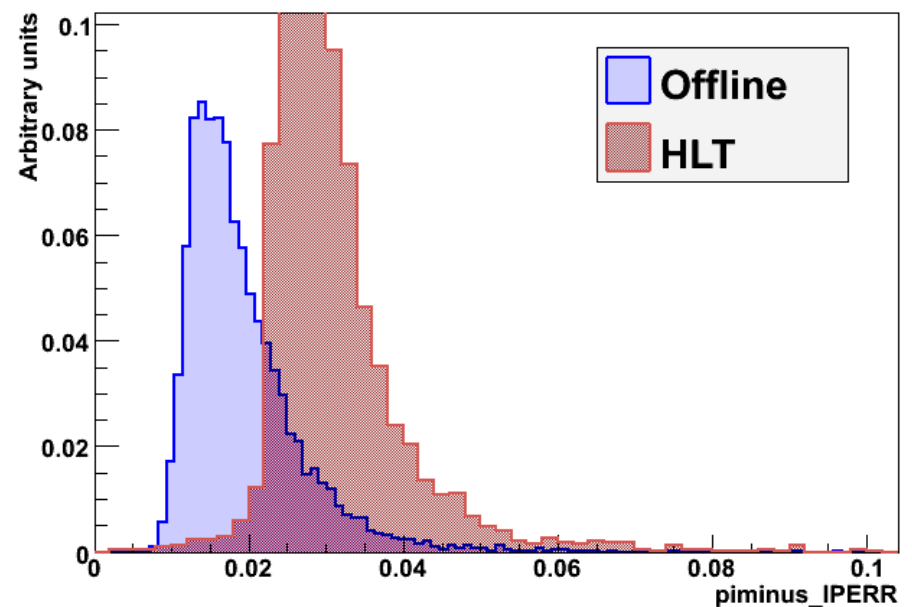
piminus_IP



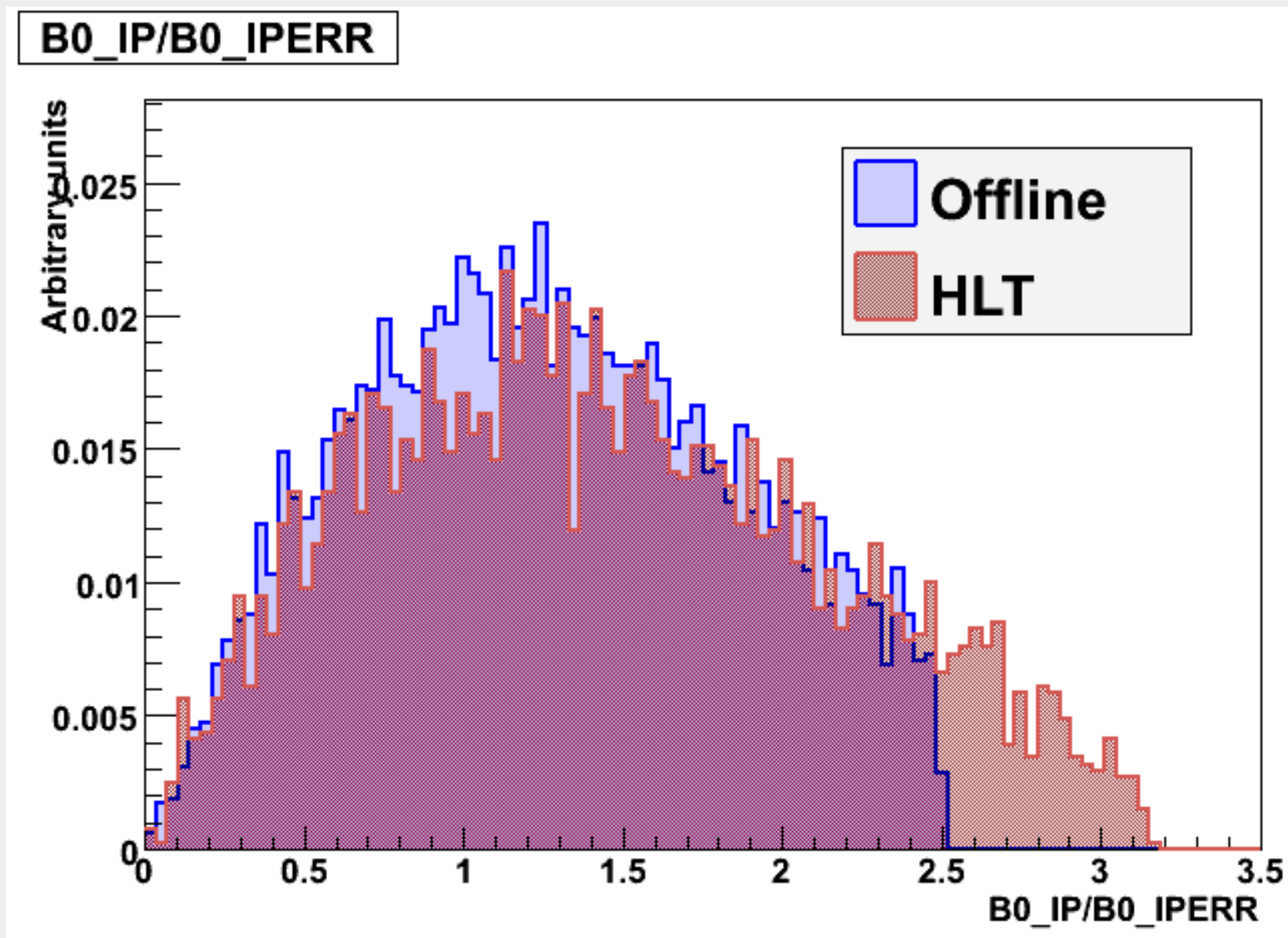
piplus_IPERR



piminus_IPERR

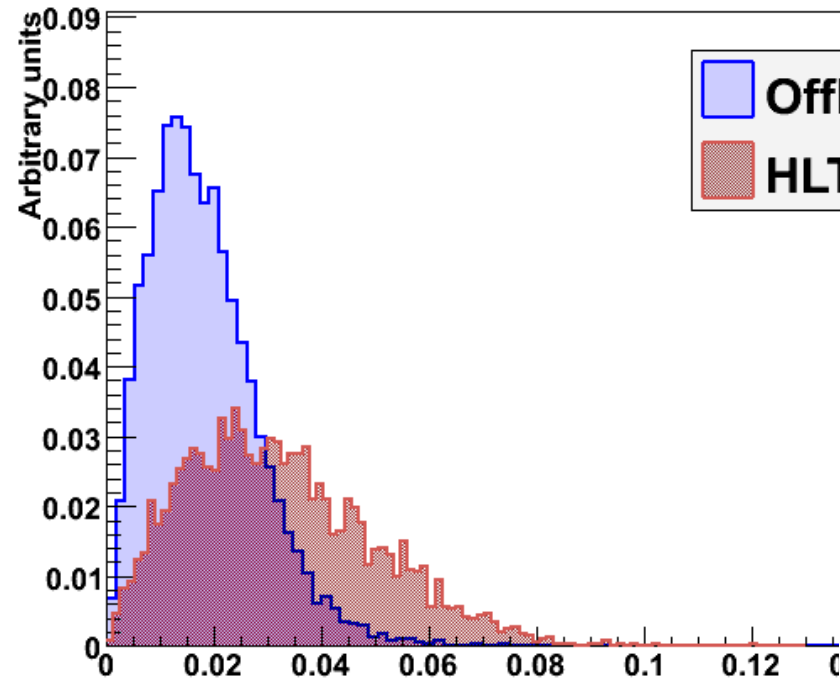


Would seem good enough ... but ...

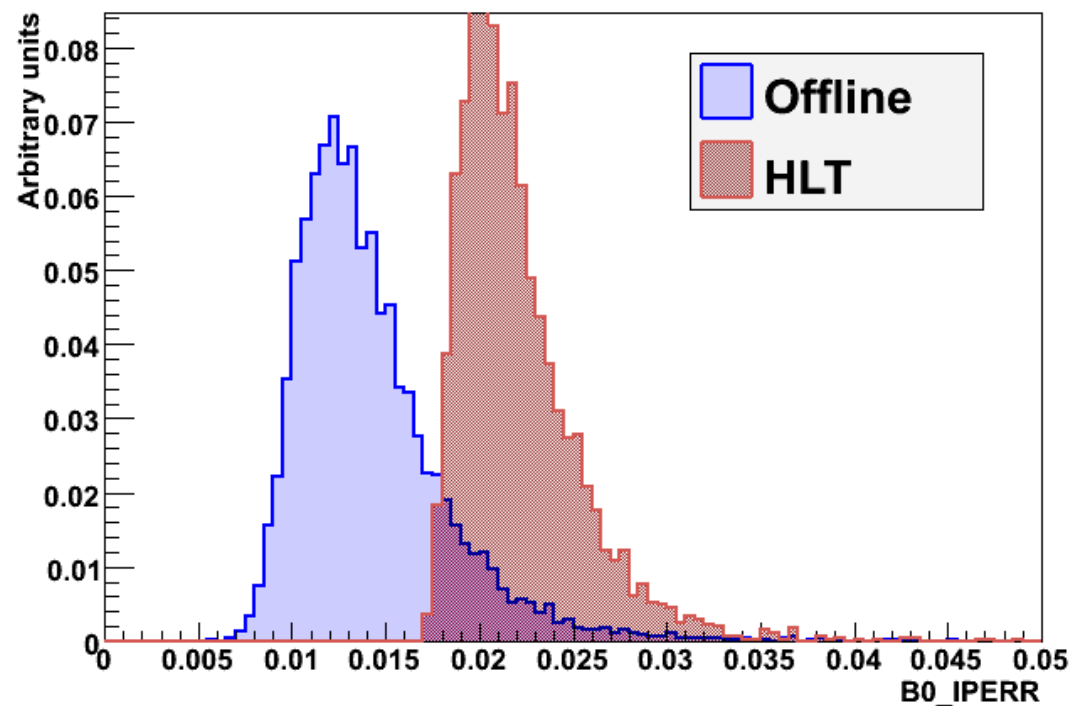


IP values and errors do not really match :S

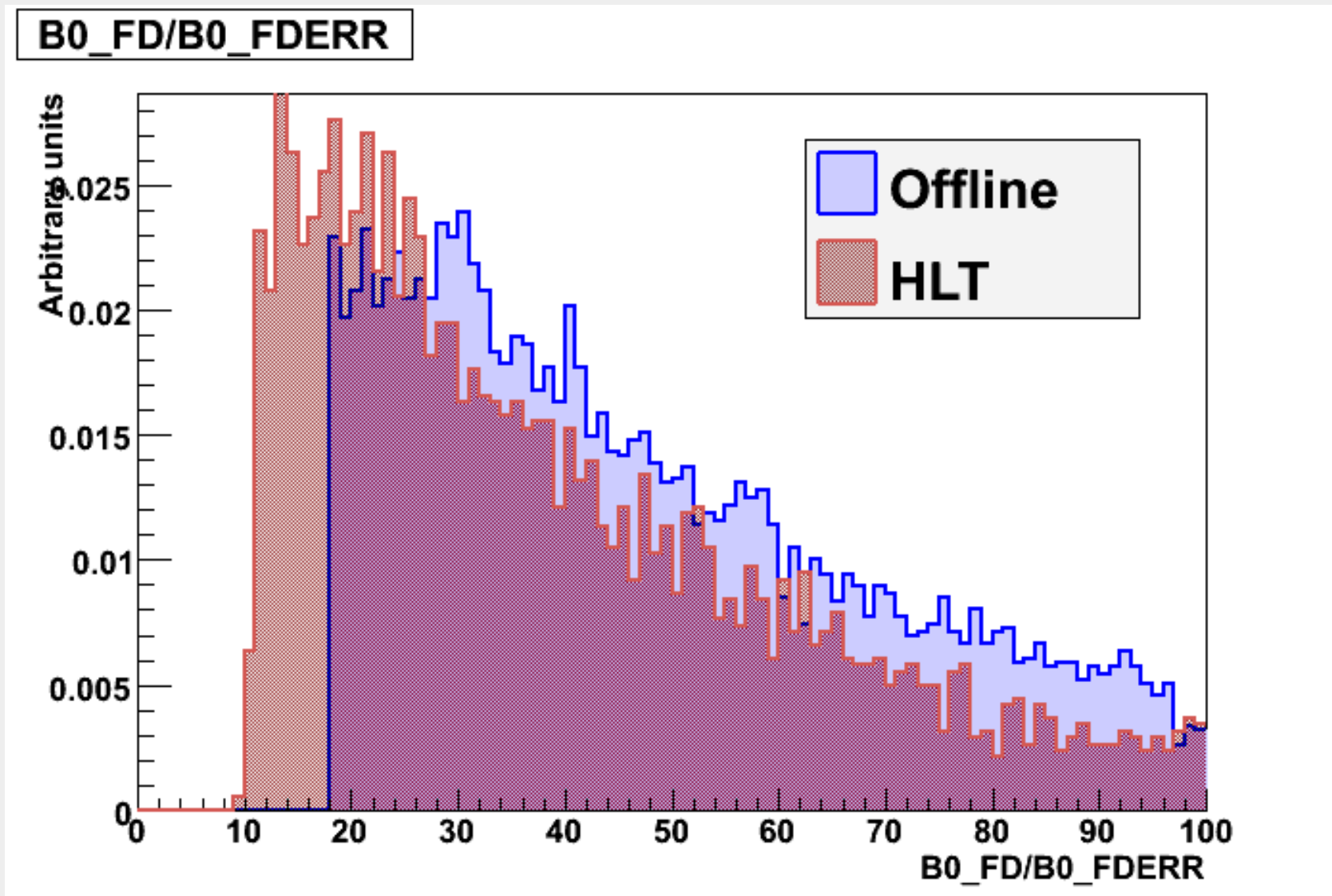
B0_IP



B0_IPERR

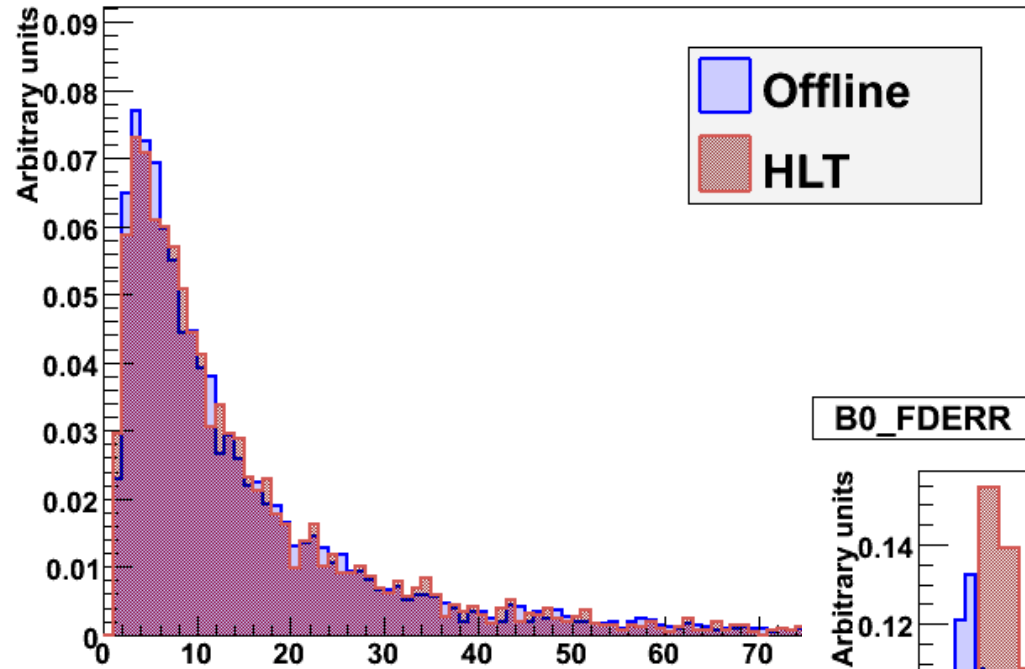


B flight distance significance

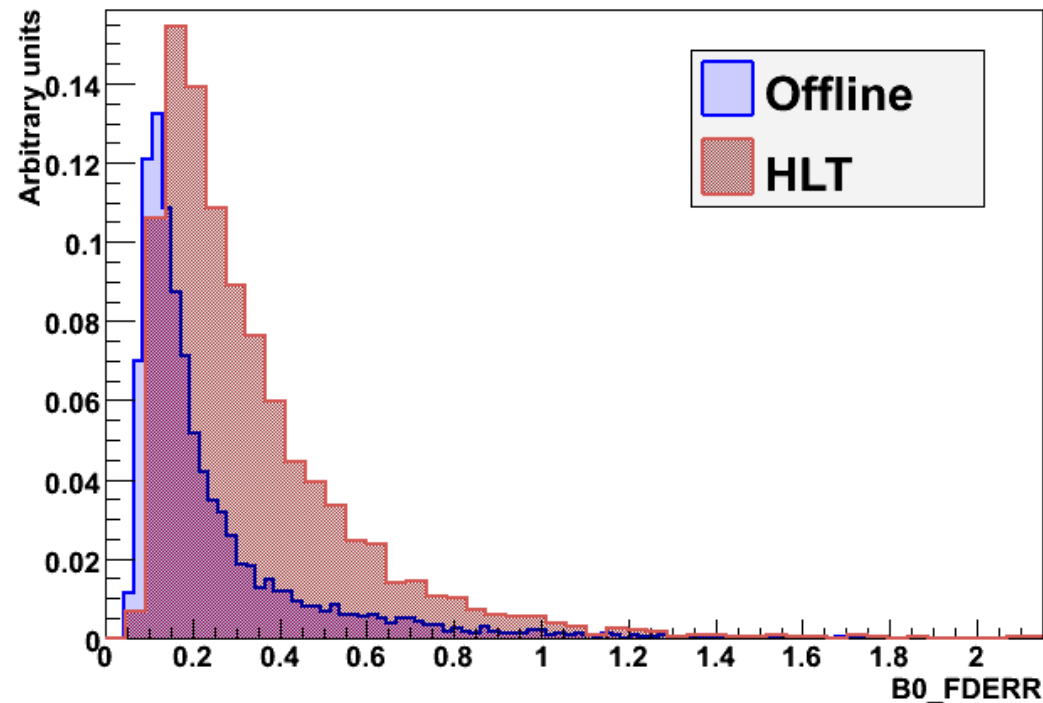


B FP: values correctly calculated, not the errors

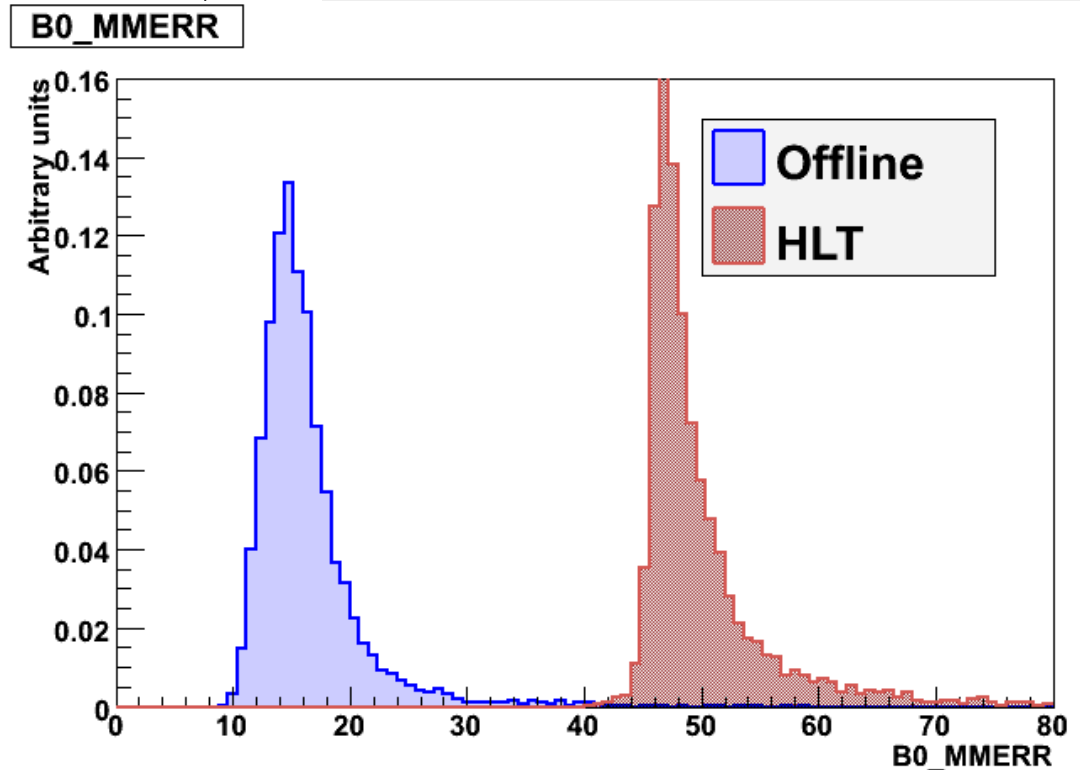
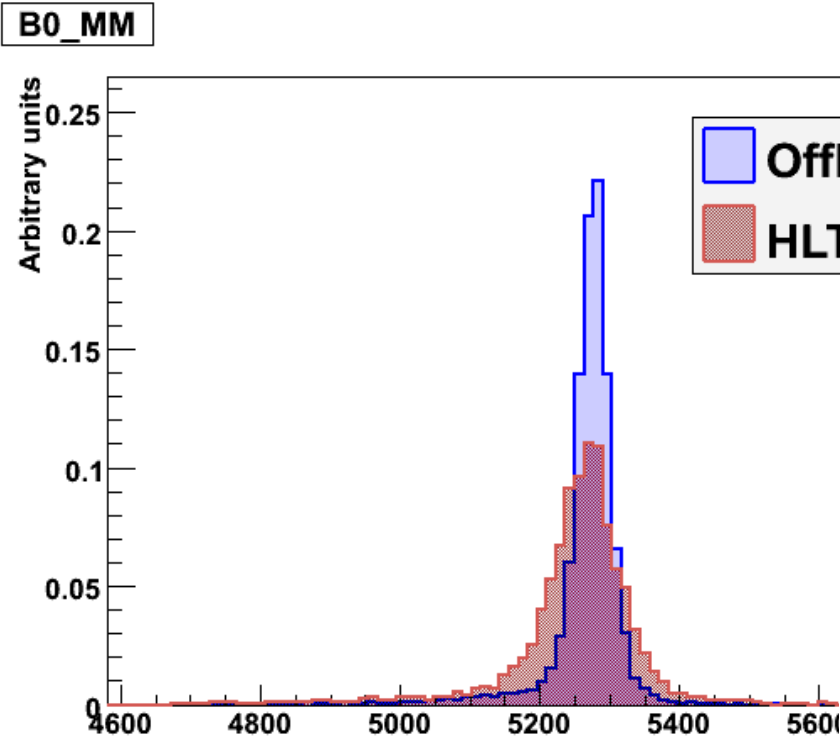
B0_FD



B0_FDERR

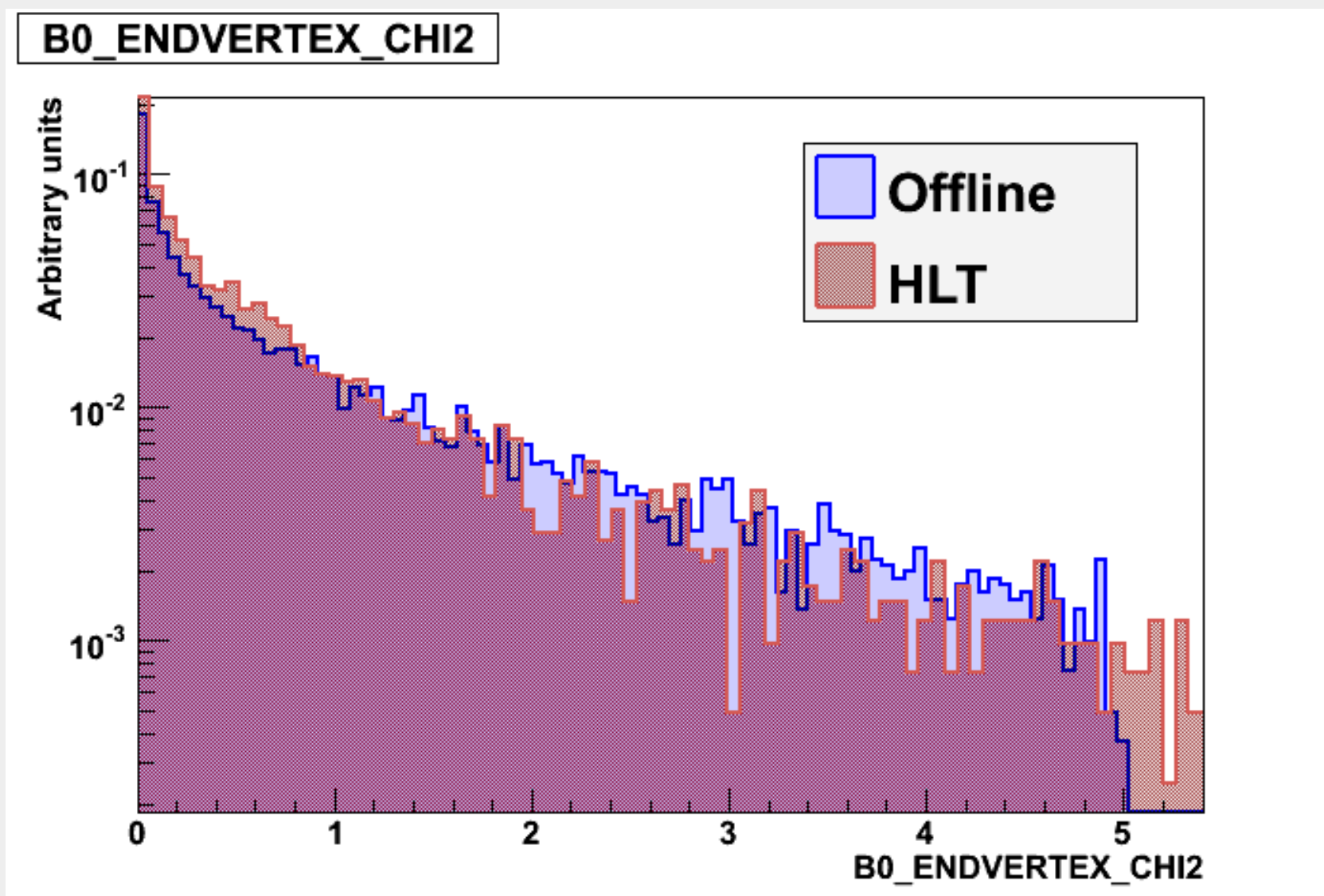


B mass: value is OK, error larger as expected



- ❑ Take this widening into account in mass window cut
- ❑ Important since we select B^0 and B_s decays altogether

B vertex χ^2 : OK



In short

- Really started looking into the trigger
- Got reassured ... but some surprises as well!

- A lot more to be investigated

- Stay tuned ...