

Multiplicities in BSemiExcl-R18b

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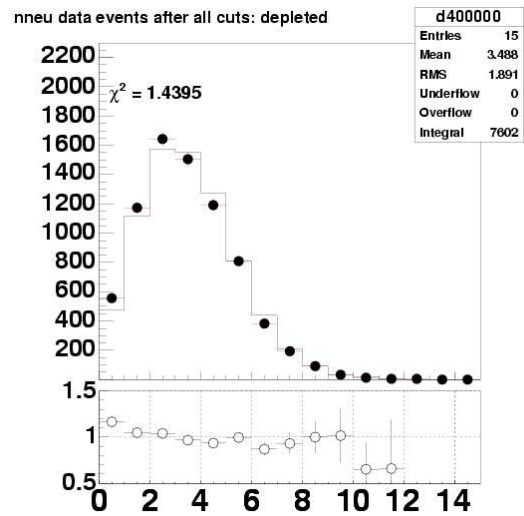
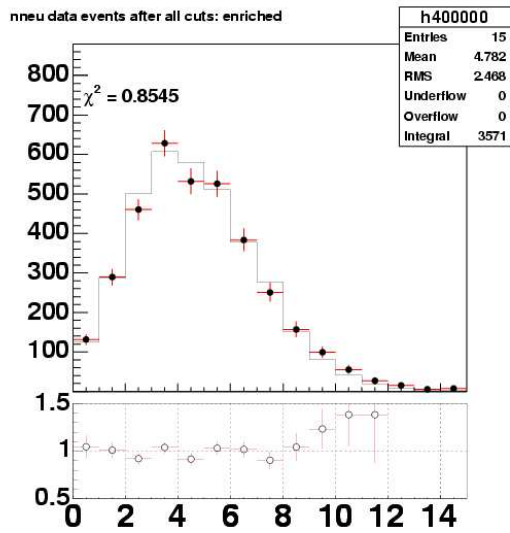
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Motivation

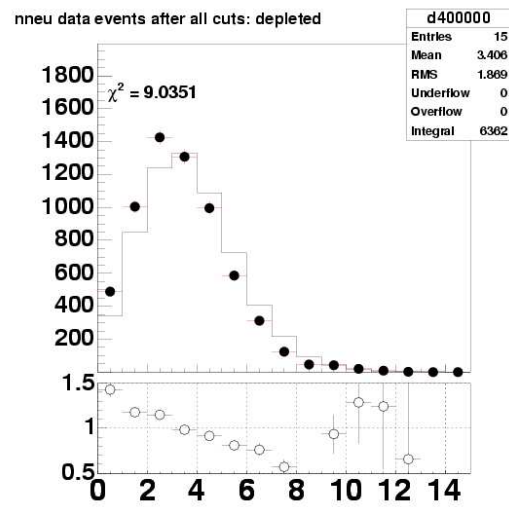
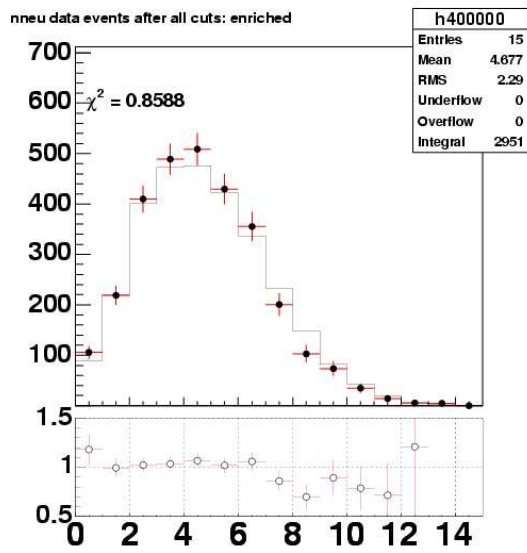
In Release 14 plots, VubRecoil group observed data/MC differences in charged and neutral multiplicities.

Q: Are these present in R18b as well?

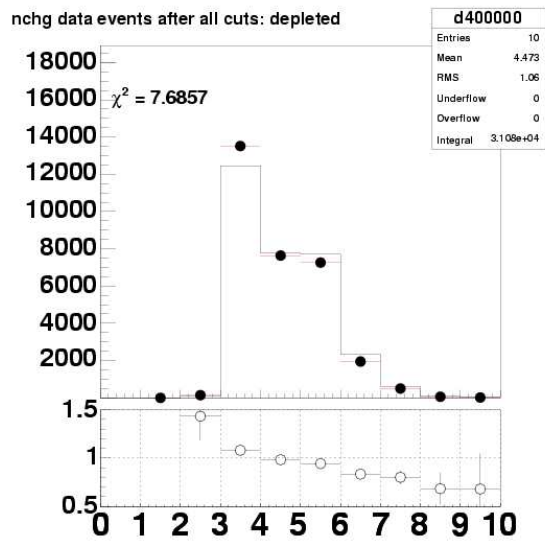
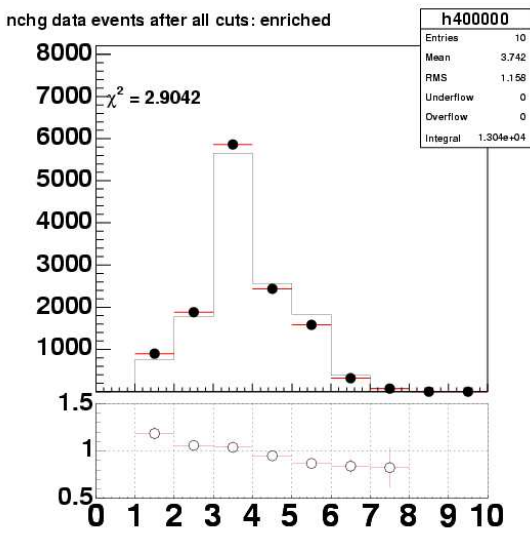
Old plots: Neutrals Run1-3



Old plots: Neutrals Run4

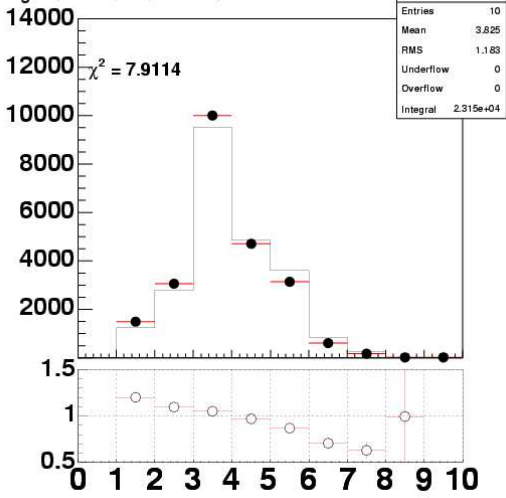


Old plots: Tracks Run1-3

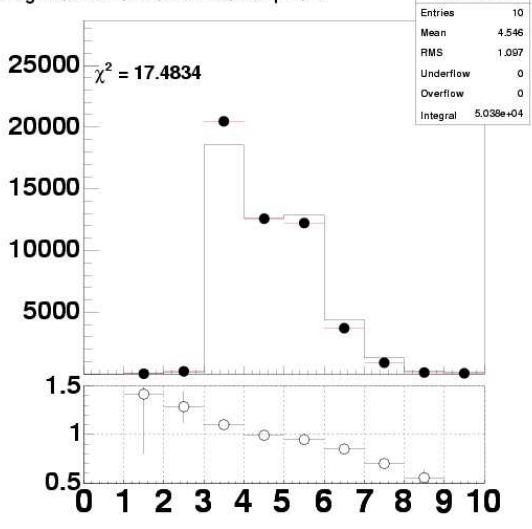


Old plots: Tracks Run4

nchg data events after all cuts: enriched



nchg data events after all cuts: depleted



About the new plots

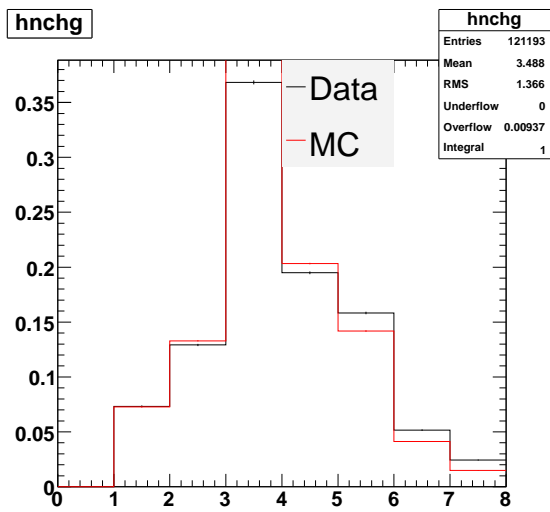
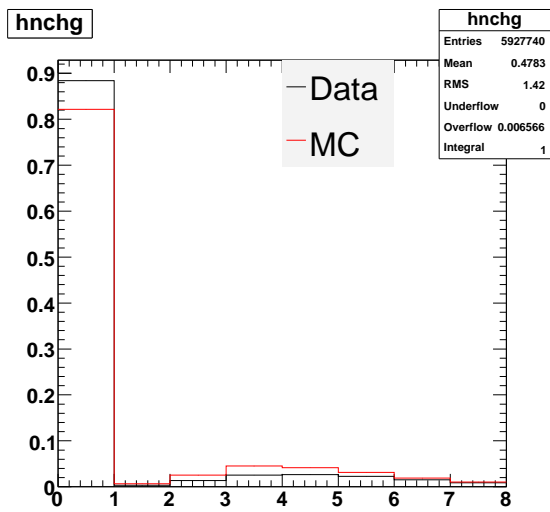
- Release: analysis-30
- Skim: BSemiExcl-R18b (Eg: BbkDatasetTcl -ds BSemiExcl-Run5-OnPeak-R18b -tcl 30000 -splitruns)
- Ntuples produced with VubRecoilUser code, modified to accept events even if they did not contain a high-momentum lepton

Plot key

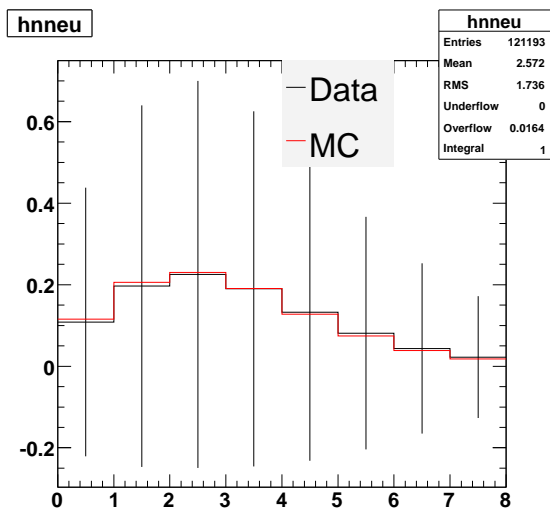
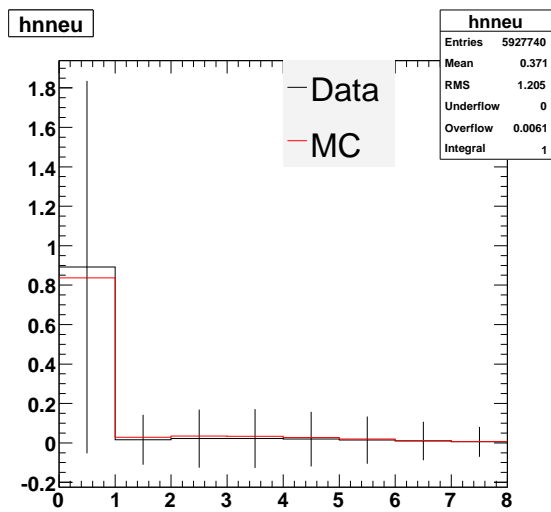
Two sets of cuts:

- Left: $mes > 5.27$
- Right: $mes > 5.27$ $N_\ell \geq 1$, $p_\ell > 1.0\text{GeV}$,
 $Q_{tot} = 0$

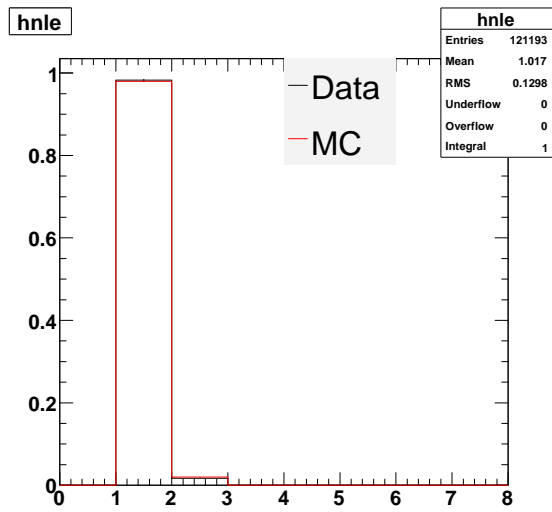
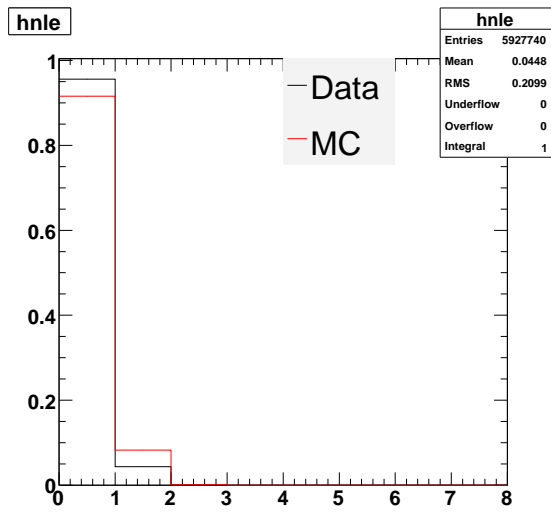
nchg



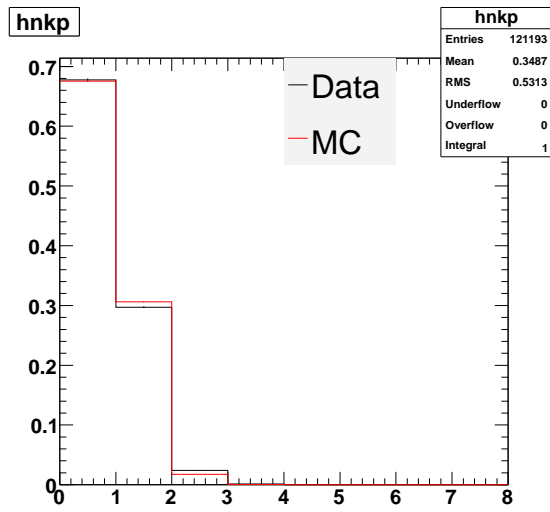
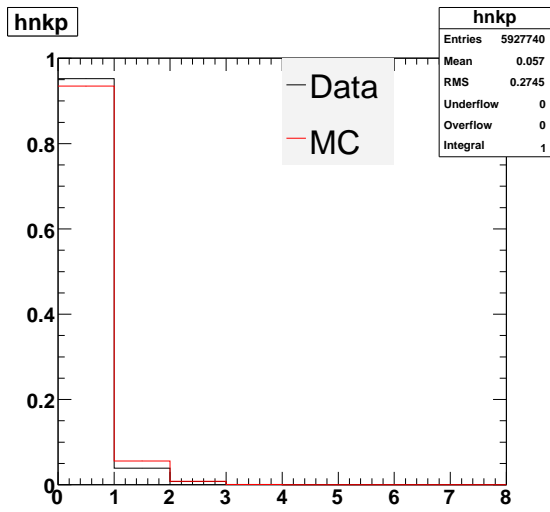
nneu



nle



nkp



Conclusion

Data/MC agreement has improved in SP8.

Webpage

Other plots are available at:

<http://www.slac.stanford.edu/~penguin/VubStuff/VubRecoil/R18bplots/index.html>

- Other variables for semileptonic B decays (nel, nmu, nks, pcms, pel, pmu)
- N_{Breco}/pb^{-1} vs run number
- Other cuts.

THE END

