

FNAL Users' Meeting 2013

MRCC Poster

Kanika Sachdev

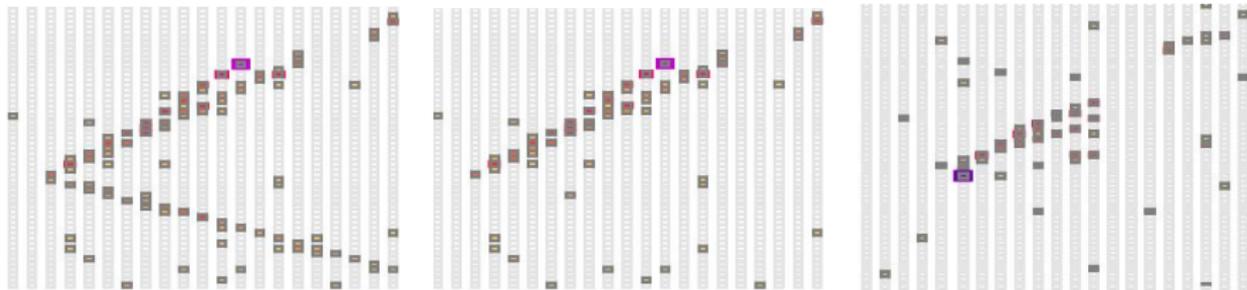
University of Minnesota

June 6, 2013

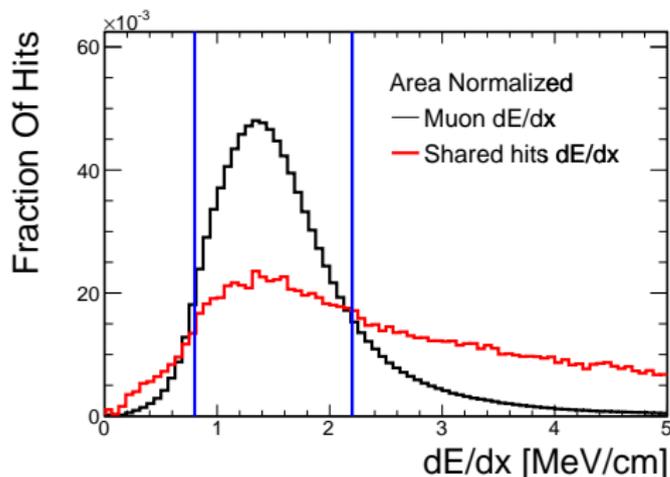
Users' Meeting 2013- Plots For Blessing

- * Will be presenting a poster at Users' Meeting at FNAL on MRCC
- * Poster will outline the idea of MRCC, its implementation and its performance.
- * All the plots were made with far detector MC from S12-11-16 release, with reconstruction and PID from S13-05-09 release.
- * There are some extra RVP and JMID variables plots. I've used three in my poster, but if popular opinion says I should use another combination of three, I will change them.
- * The muon was removed by ReMID for all the plots. The original ReMID value of the event has to have been greater than 0.7 for all the RVP, JMID plots.
- * For the performance plots, I didn't use a cut on ReMID. Instead required that the removed track had greater than 90% muon hit efficiency.

Event Display Examples (MC) - ν_μ CC, MRCC and NC



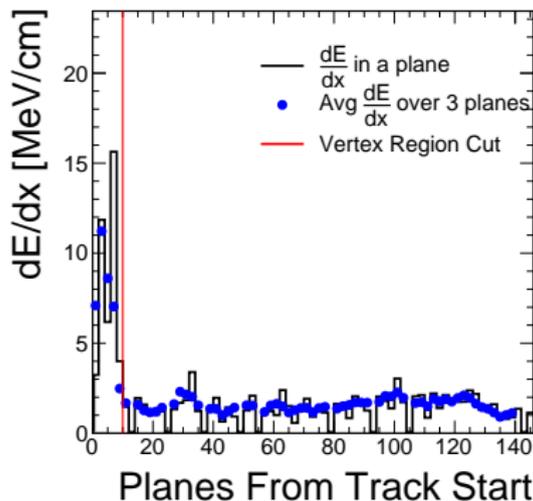
dE/dx Distributions



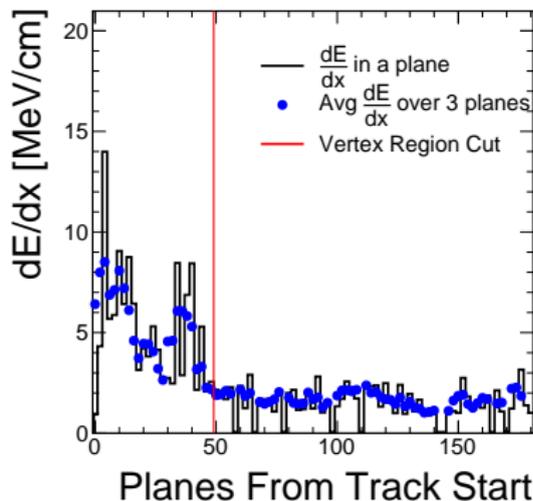
- * Blue lines encloses the allowed dE/dx range. Outside this range, the CleanUp algorithm is applied, as long as these hits are within the vertex region
- * These cut out 24.78% of muon only hits and 74.49% of muon hits that have hadronic contamination

Vertex Region Cut

Event 2 - X View



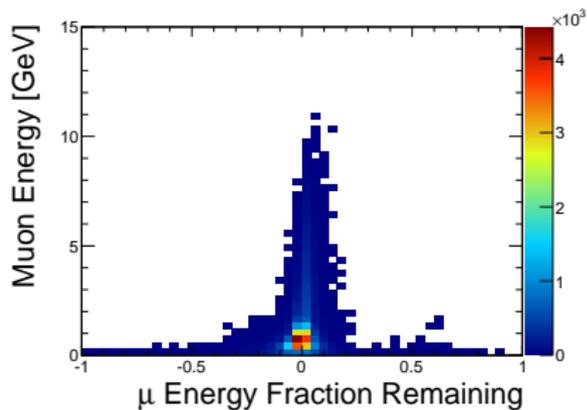
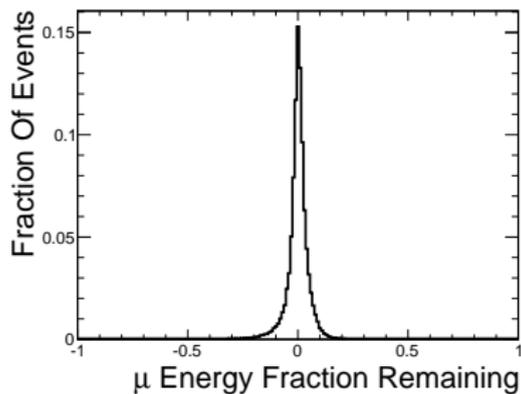
Event 2 - Y View



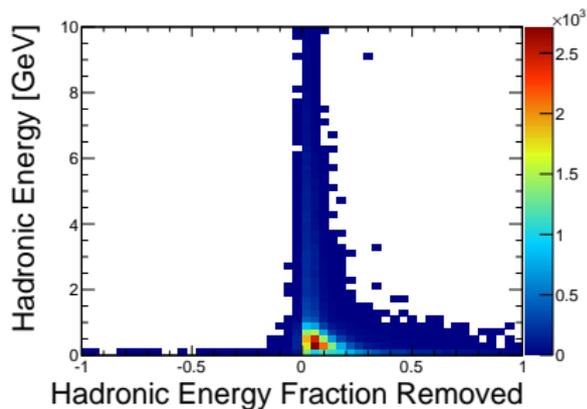
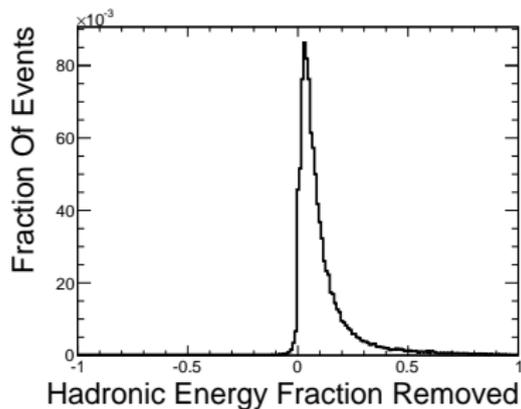
Vertex region is defined as the region over which track CleanUp is performed. To see how I figure the bounds of vertex region, please see Doc 8081, page 8.

Vertex region is determined separately for each view.

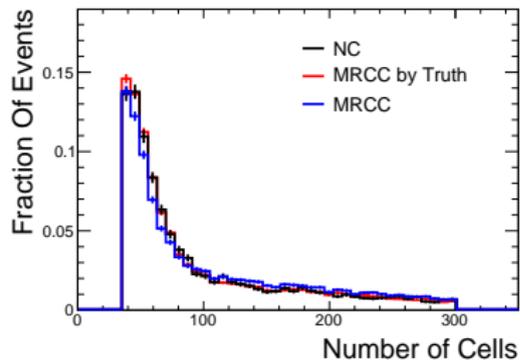
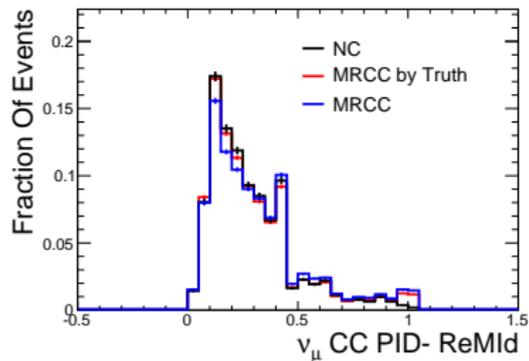
Performance Plots: Muon Energy Fraction Left Behind



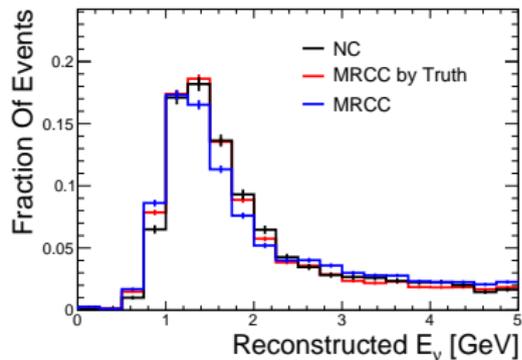
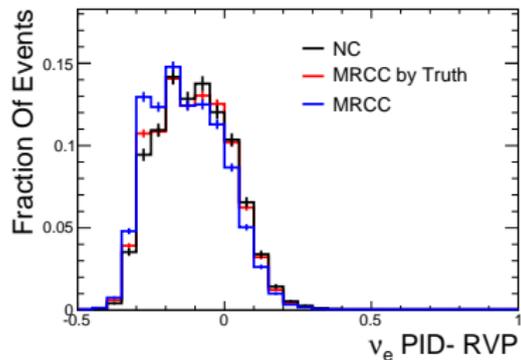
Performance Plots: Hadron Energy Fraction Removed



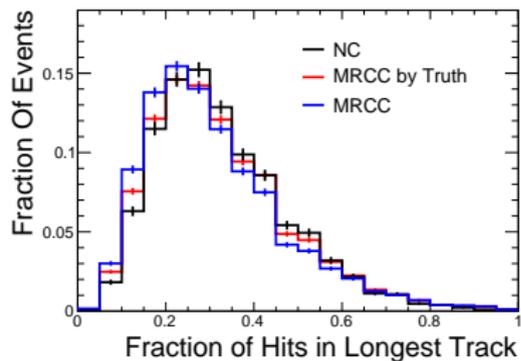
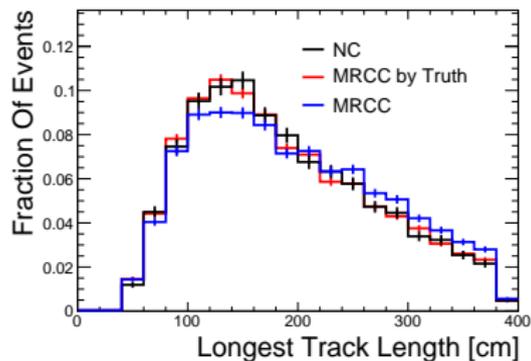
RVP and JMId variables



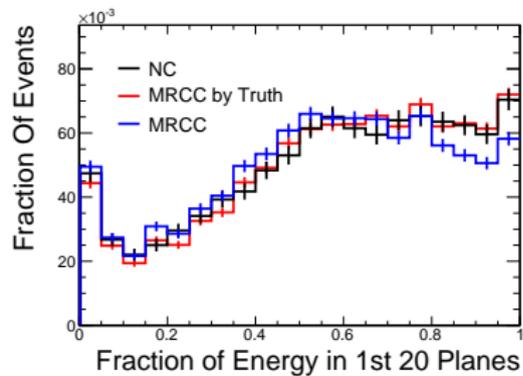
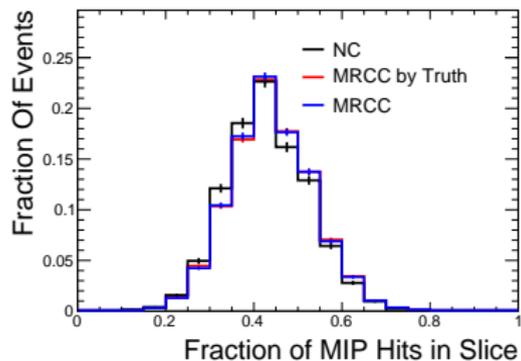
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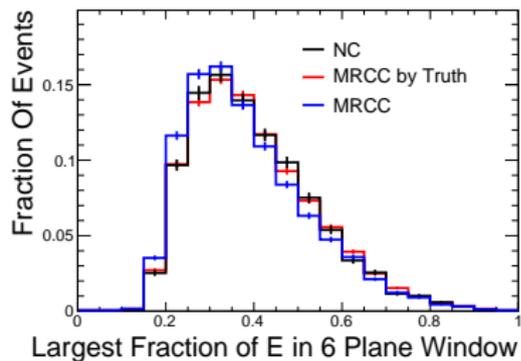
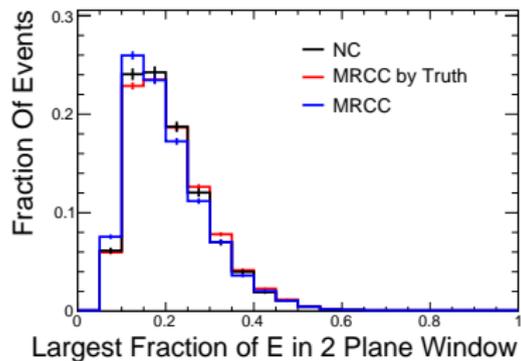
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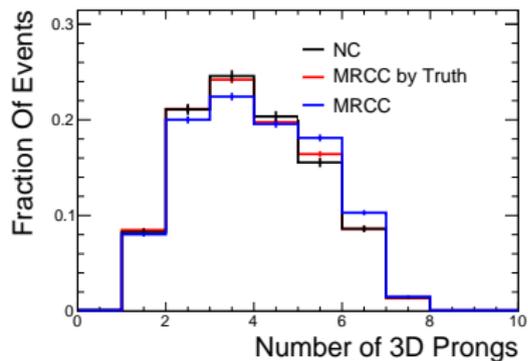
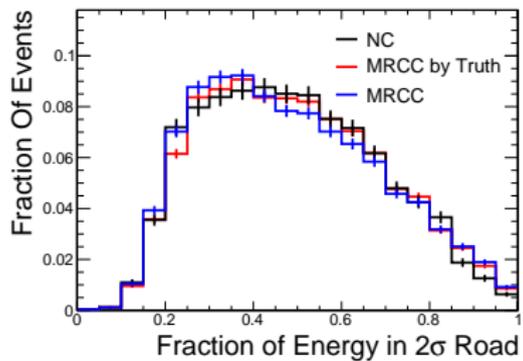
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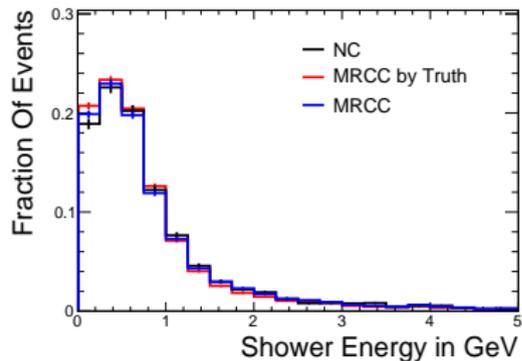
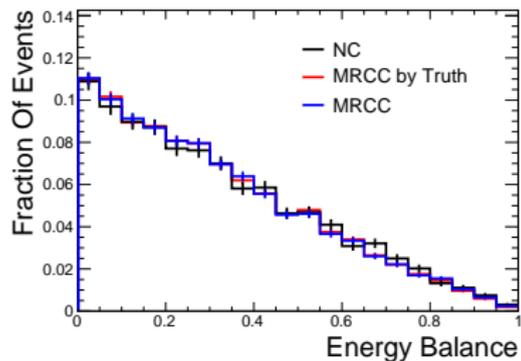
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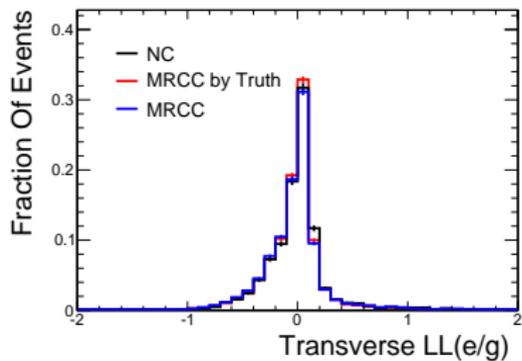
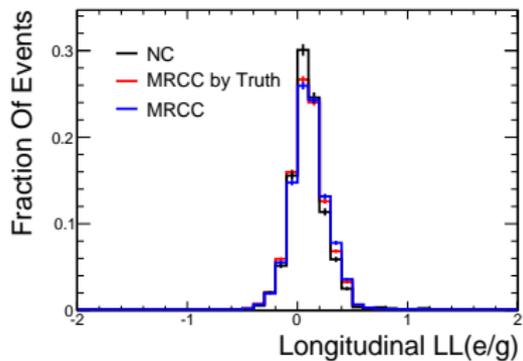
RVP and JMId variables



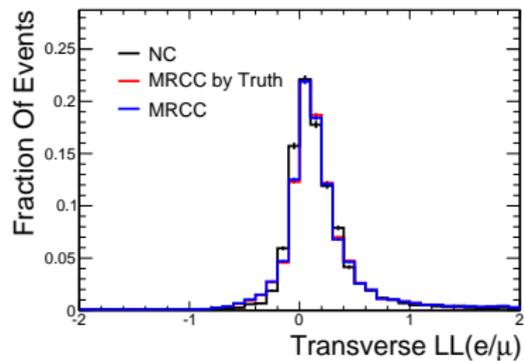
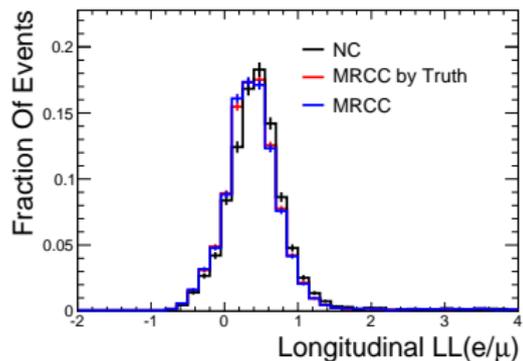
RVP and JMId variables



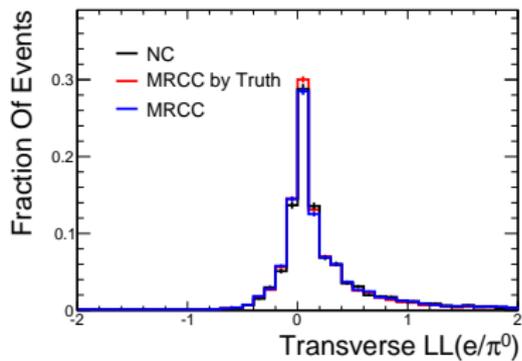
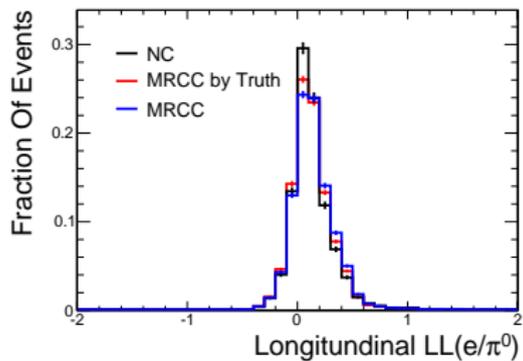
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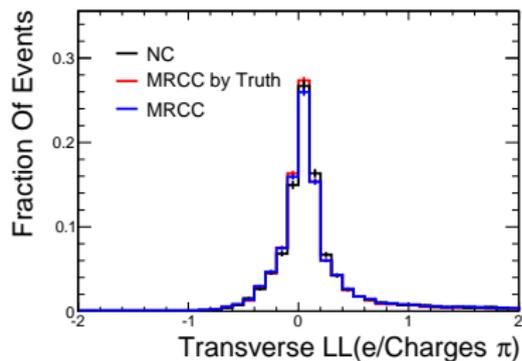
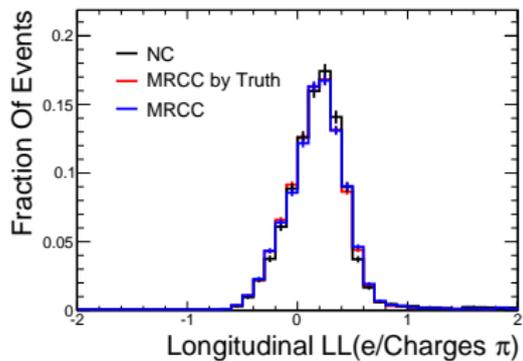
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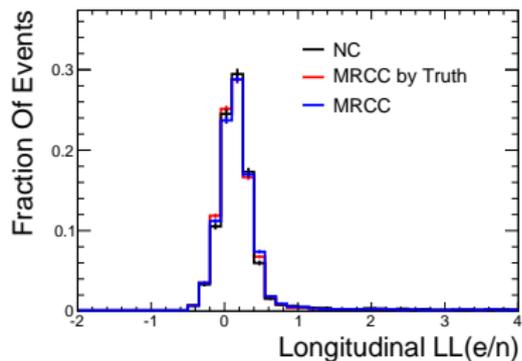
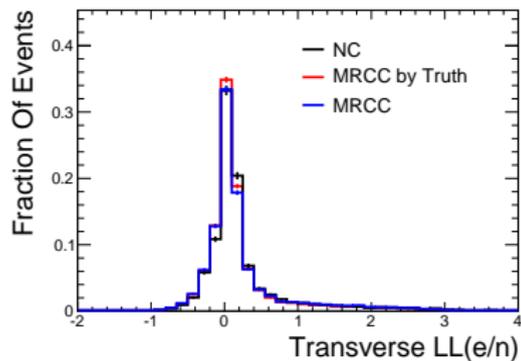
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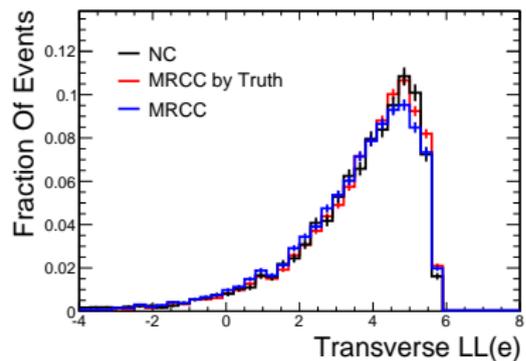
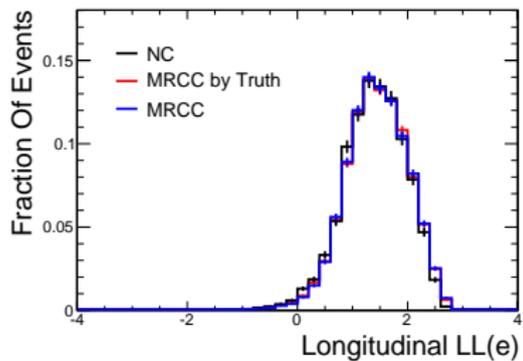
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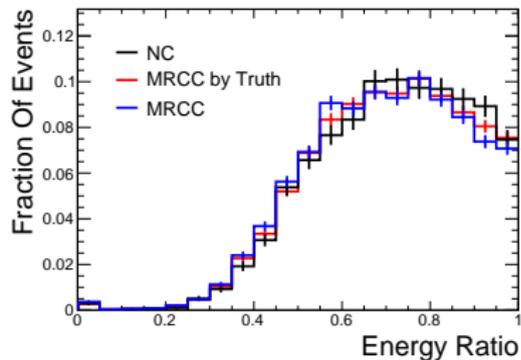
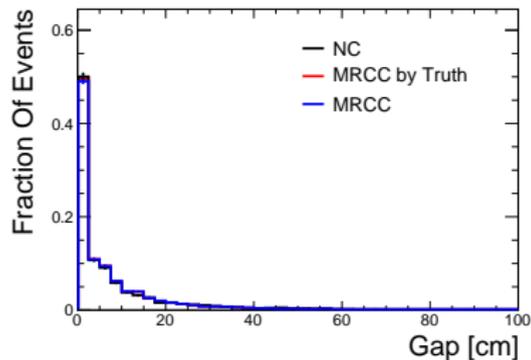
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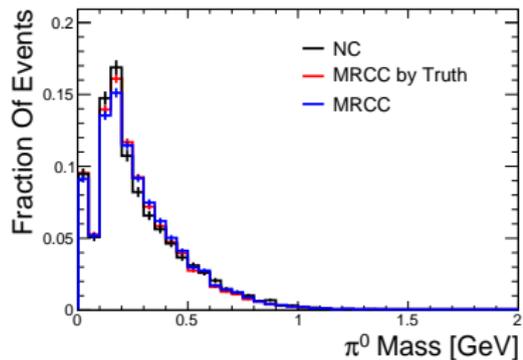
RVP and JMId variables



RVP and JMId variables



RVP and JMId variables



So what do you think?