

# Cut analysis for ORCA4

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# Cut definitions

- Containment cuts:  
**gandalf\_pos\_r < 35**  
Vertex position from mean DU position is < 35m  
*Interpretation:* the mean DU position is the center of the detector.  
35m from the center.
- Physics cuts:  
**gandalf\_dir\_z < 0**  
Events are reconstructed as upward going  
**1 < gandalf\_energy < 100**  
Reconstructed energy in range 1-100 GeV
- Cherenkov conditions (CC) are defined as:  
Hit time <= 15ns from expected hit time  
Hit distance closest approach < 100m  
**chercond\_n\_doms >= 5**  
Number of DOMs in CC >= 5  
**chercond\_n\_doms\_trig >= 3**  
Number of triggered DOMs in CC >= 3  
**chercond\_n\_hits\_dnf >= 5**  
Number of hits on downward facing PMTs on all?? DOMs in CC  
**chercond\_n\_hits\_dnMup >= 10**  
Number of hits on downward facing PMT – upward facing PMT on all?? DOMs in CC  
**chercond\_n\_hits\_trig\_dnMup >= 0**  
Number of triggered hits on downward facing PMT – upward facing PMT on DOMs in CC
- Reconstruction & BG suppression cuts:  
**maxToT < 240**  
Largest ToT in set of hits that caused a trigger is < 240  
**L\_up/nHits > 2**  
Quality of best upgoing / number of hits used in reconstruction > 2  
**L\_up / L\_down > 40**  
Quality of best up / quality of best downgoing reconstruction > 40  
**d\_closest < 20**  
Distance of closest hit to reco track is < 20m  
**"cut1": L\_up \* (1./nHits + 0.045) > 5**  
Adjusted reco quality cut...  
**"cut2": (((meanZhitTrig - lowest\_dom\_z) > 25) || ((gandalf\_pos\_r < 20.) && (meanZhitTrig - lowest\_dom\_z > 15.))) > 1**  
Mean z position of triggered hits is 25m higher than lowest hit DOM OR distance from mean DU position is < 20m AND mean z position of triggered hits is 15m higher than lowest hit DOM  
*Interpretation of cut2:* event is somewhere in the middle of the detector, not too low, not too far from center

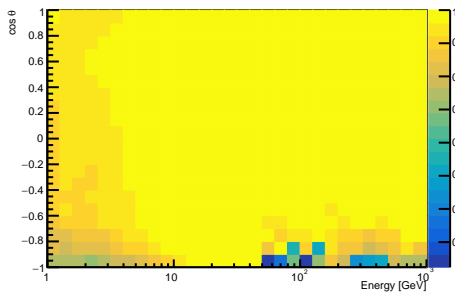
# Explanation of the graphs

MC: energy vs CosTh Acceptance	Data: energy vs CosTh Acceptance	Cut value distribution: Blue neutrino Green muon Rejected   Accepted	The cut distribution is weighted: it gives the number of events in the model
MC: CosTh Acceptance	Data: CosTh Acceptance	MC & Data: CosTh distribution after cuts	Acceptance := Number of uncut event / Number of total events
MC: energy Acceptance	Data: energy Acceptance	MC & Data: energy distribution after cuts	The title of the histograms show which cut is considered and whether it is 1 or N-1 cuts

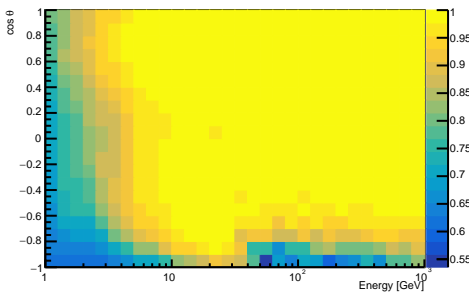
# Applying 1 cut

The plots show the impact of the 1 cut on the entire data/MC selection

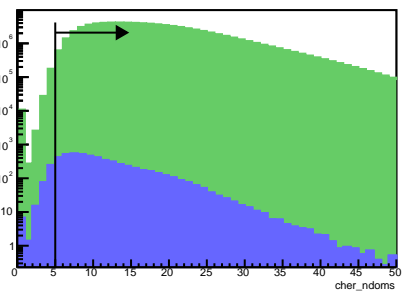
[MC] Acceptance of cut: cher\_ndoms



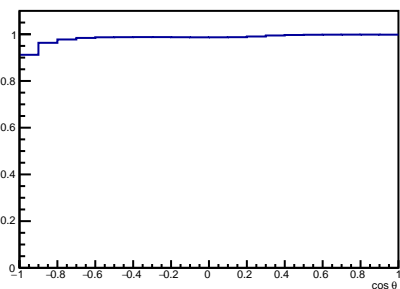
[Data] Acceptance of cut: cher\_ndoms



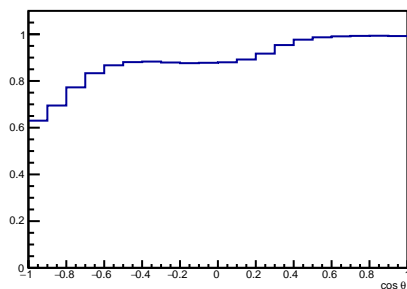
Weighted distribution of cut value



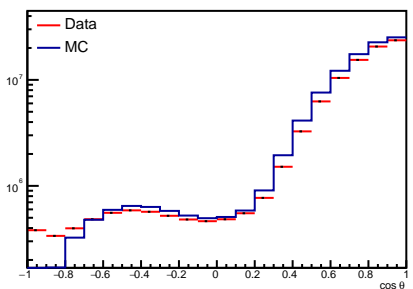
[MC] Angle acceptance of cut: cher\_ndoms



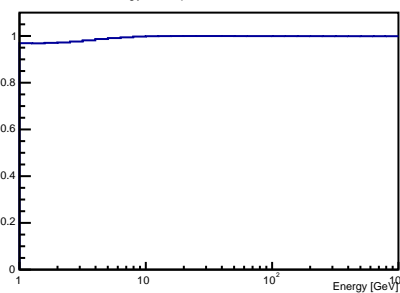
[Data] Angle acceptance of cut: cher\_ndoms



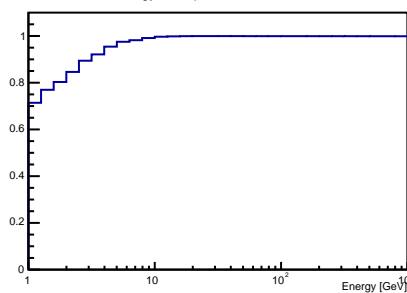
Angle distribution with cut: cher\_ndoms



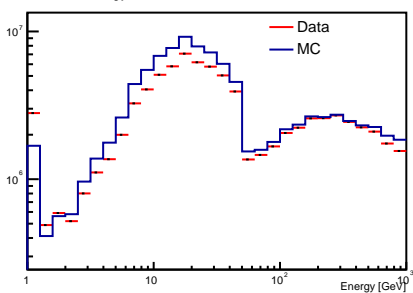
[MC] Energy acceptance of cut: cher\_ndoms



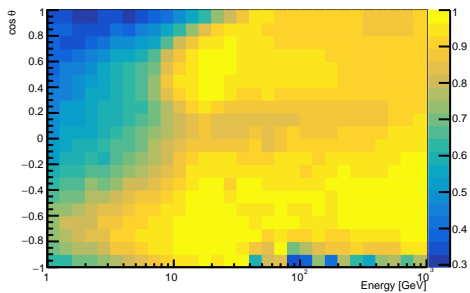
[Data] Energy acceptance of cut: cher\_ndoms



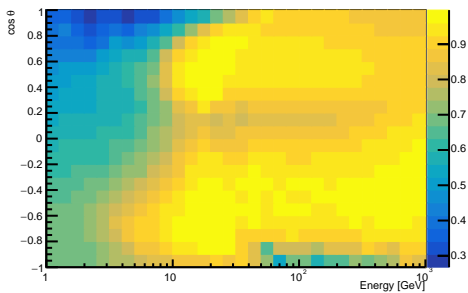
Energy distribution with cut: cher\_ndoms



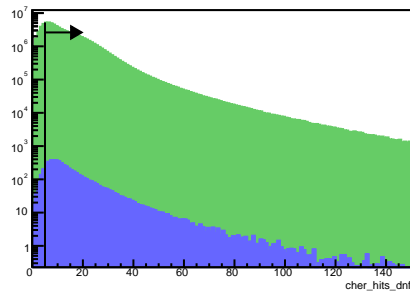
[MC] Acceptance of cut: cher\_hits\_dnf



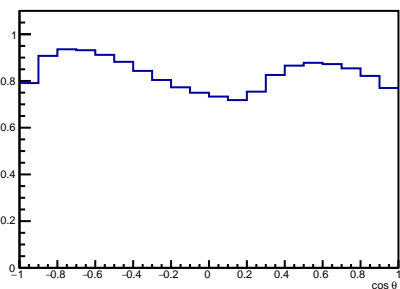
[Data] Acceptance of cut: cher\_hits\_dnf



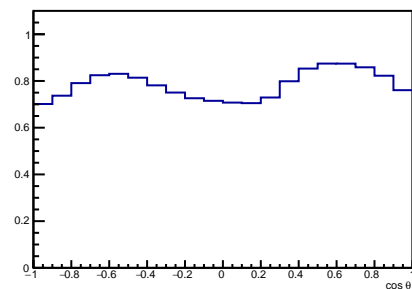
Weighted distribution of cut value



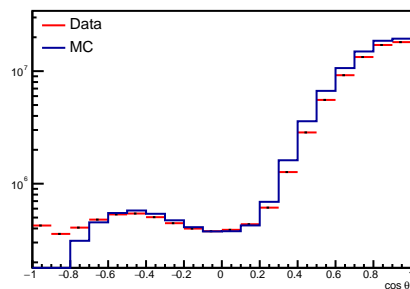
[MC] Angle acceptance of cut: cher\_hits\_dnf



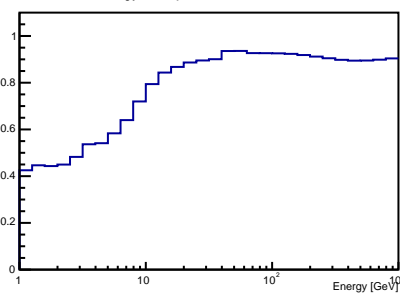
[Data] Angle acceptance of cut: cher\_hits\_dnf



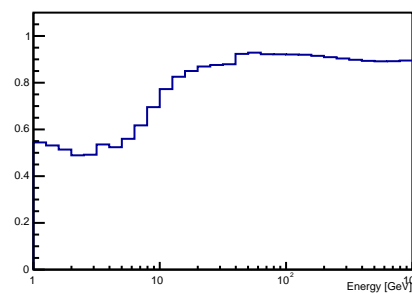
Angle distribution with cut: cher\_hits\_dnf



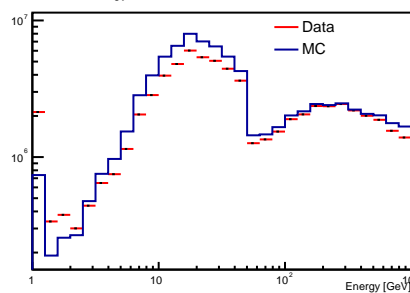
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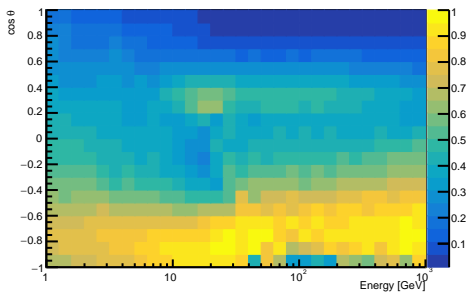
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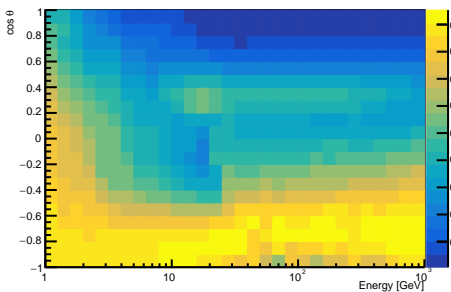
Energy distribution with cut: cher\_hits\_dnf



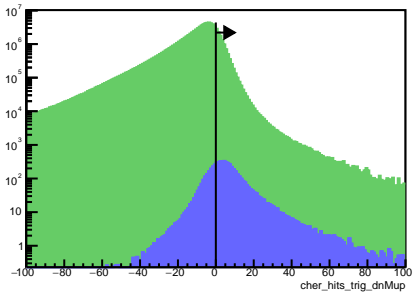
[MC] Acceptance of cut: cher\_hits\_trig\_dnMup



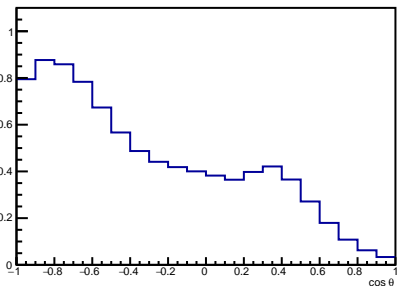
[Data] Acceptance of cut: cher\_hits\_trig\_dnMup



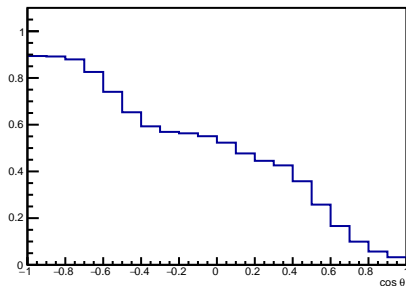
Weighted distribution of cut value



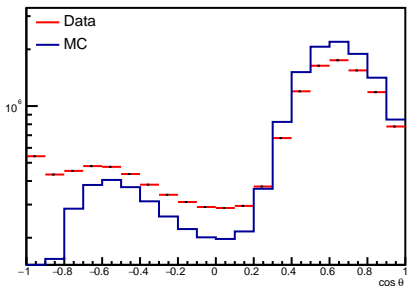
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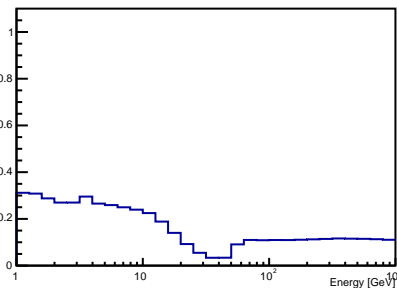
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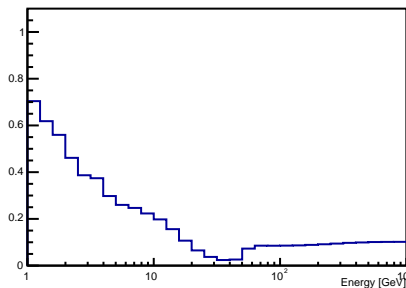
Angle distribution with cut: cher\_hits\_trig\_dnMup



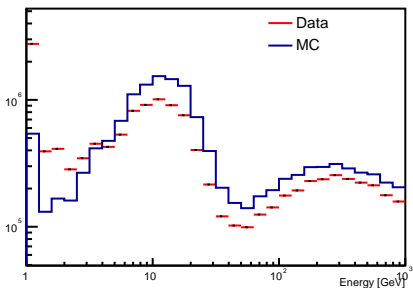
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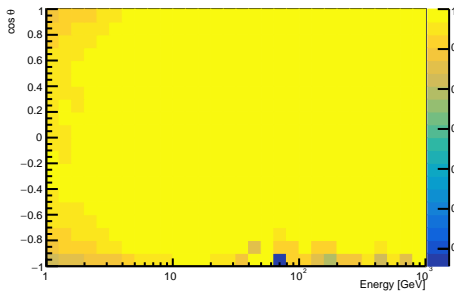
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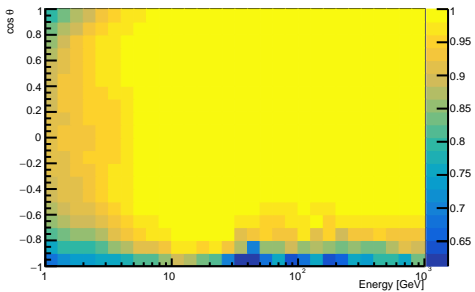
Energy distribution with cut: cher\_hits\_trig\_dnMup



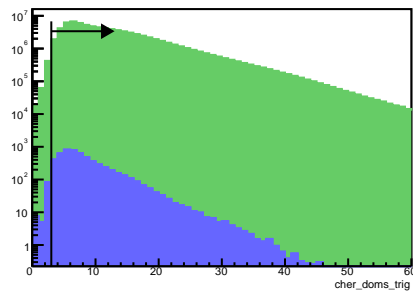
[MC] Acceptance of cut: cher\_doms\_trig



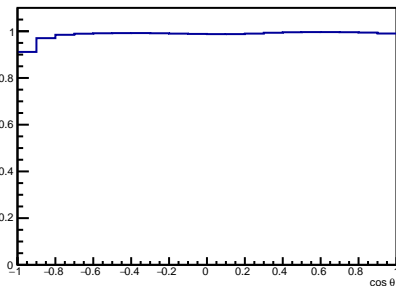
[Data] Acceptance of cut: cher\_doms\_trig



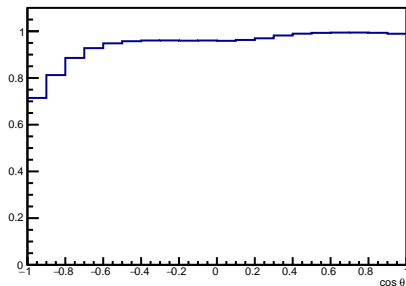
Weighted distribution of cut value



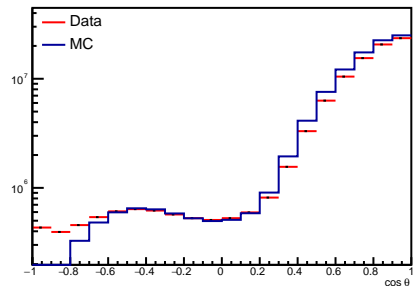
[MC] Angle acceptance of cut: cher\_doms\_trig



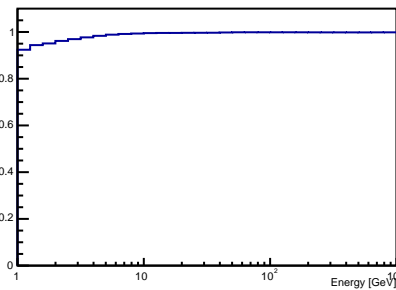
[Data] Angle acceptance of cut: cher\_doms\_trig



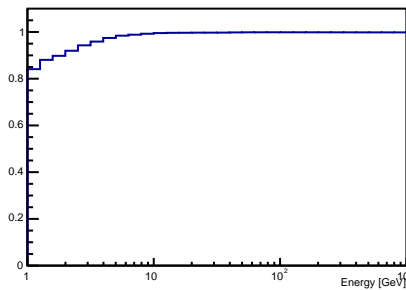
Angle distribution with cut: cher\_doms\_trig



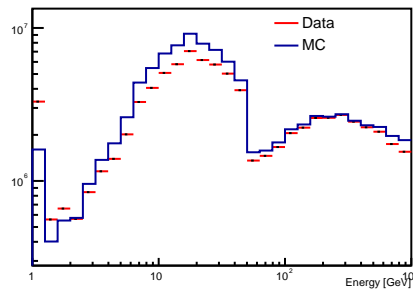
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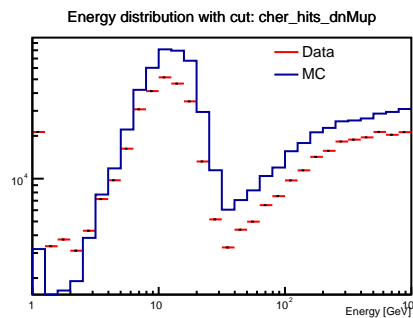
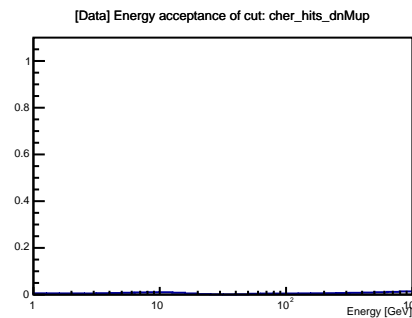
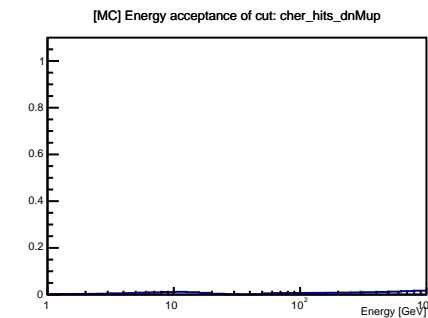
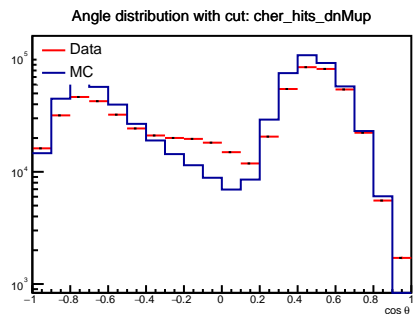
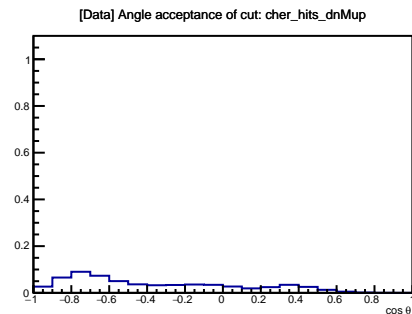
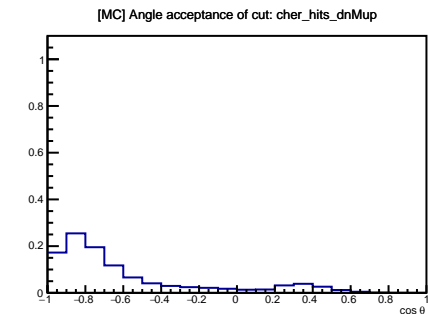
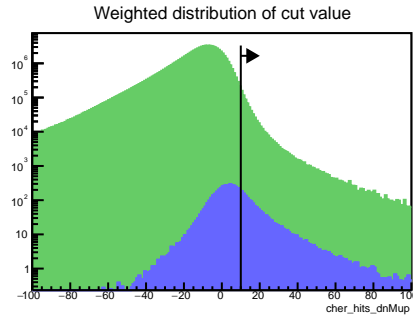
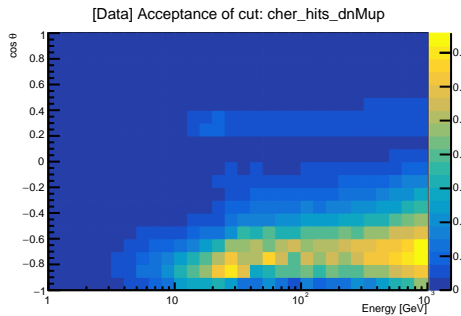
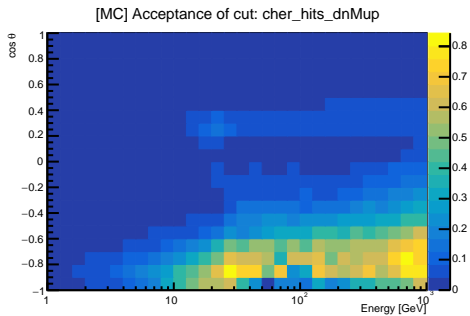
[Data] Energy acceptance of cut: cher\_doms\_trig



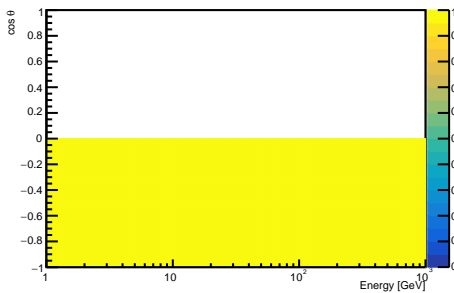
Energy distribution with cut: cher\_doms\_trig



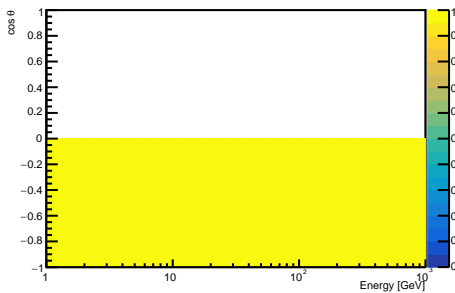




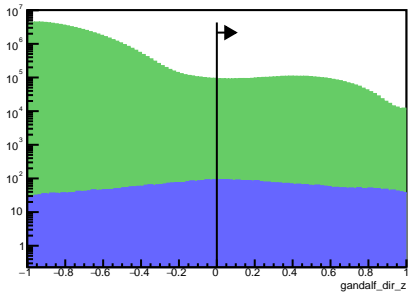
[MC] Acceptance of cut: gandalf\_dir\_z



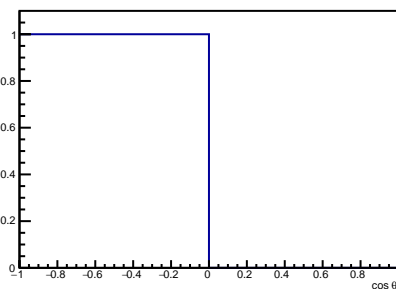
[Data] Acceptance of cut: gandalf\_dir\_z



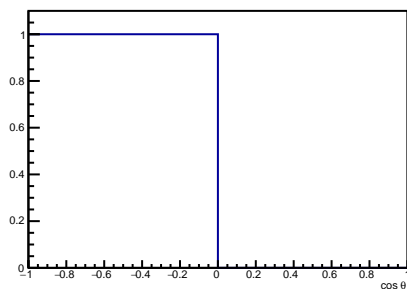
Weighted distribution of cut value



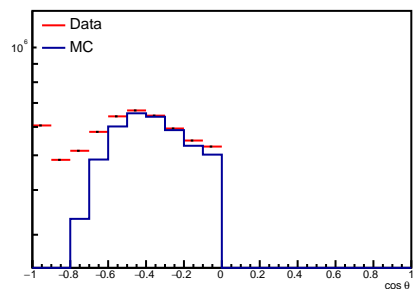
[MC] Angle acceptance of cut: gandalf\_dir\_z



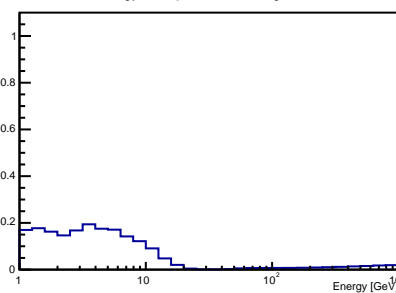
[Data] Angle acceptance of cut: gandalf\_dir\_z



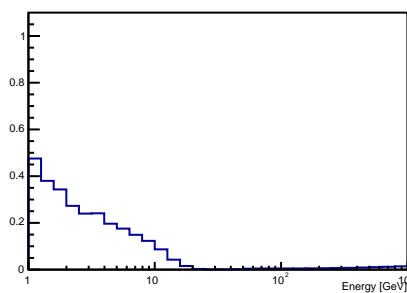
Angle distribution with cut: gandalf\_dir\_z



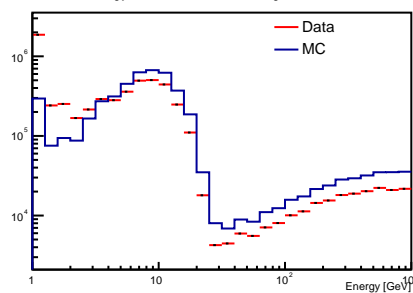
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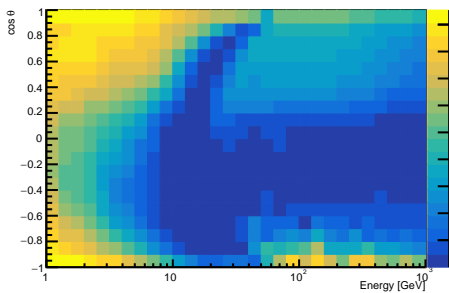
[Data] Energy acceptance of cut: gandalf\_dir\_z



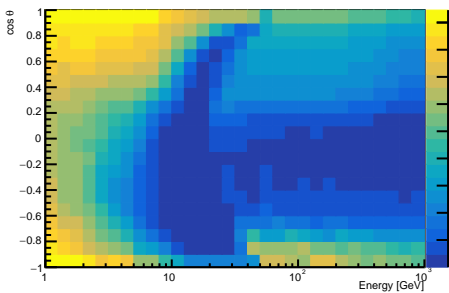
Energy distribution with cut: gandalf\_dir\_z



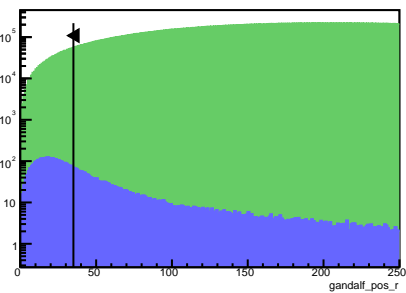
[MC] Acceptance of cut: gandalf\_pos\_r



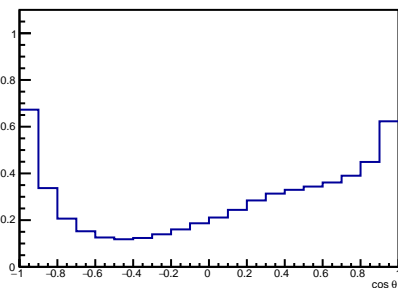
[Data] Acceptance of cut: gandalf\_pos\_r



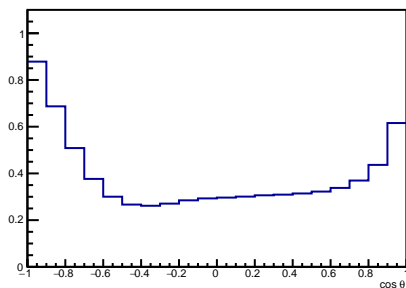
Weighted distribution of cut value



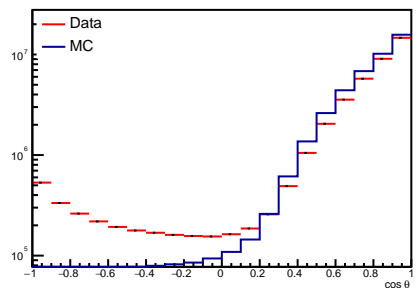
[MC] Angle acceptance of cut: gandalf\_pos\_r



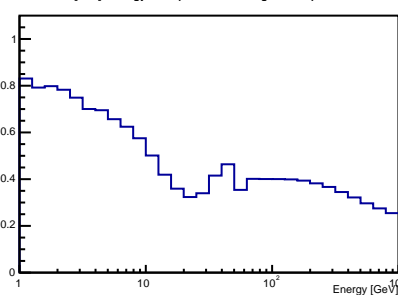
[Data] Angle acceptance of cut: gandalf\_pos\_r



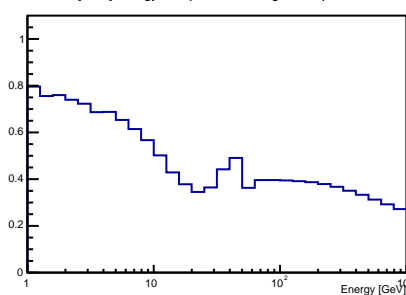
Angle distribution with cut: gandalf\_pos\_r



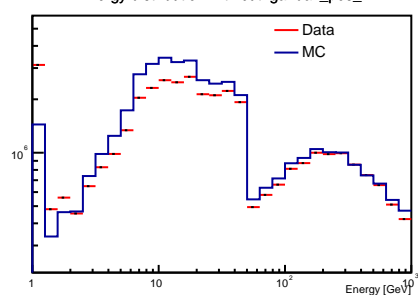
[MC] Energy acceptance of cut: gandalf\_pos\_r



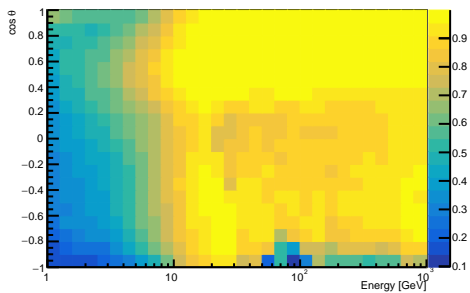
[Data] Energy acceptance of cut: gandalf\_pos\_r



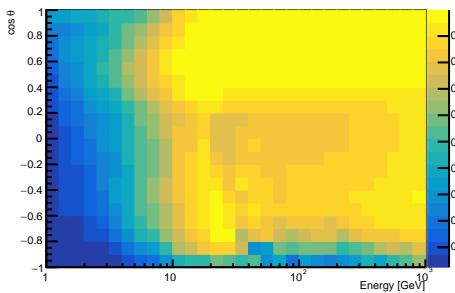
Energy distribution with cut: gandalf\_pos\_r



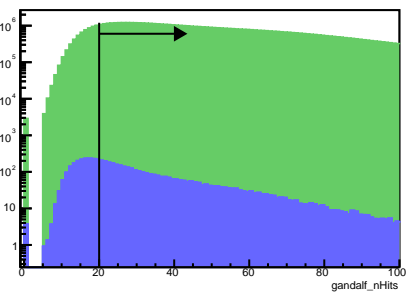
[MC] Acceptance of cut: gandalf\_nHits



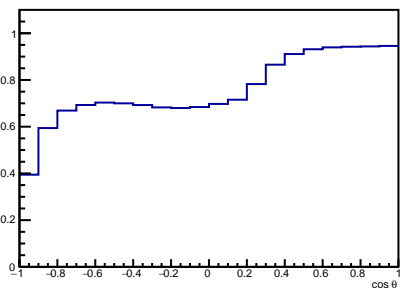
[Data] Acceptance of cut: gandalf\_nHits



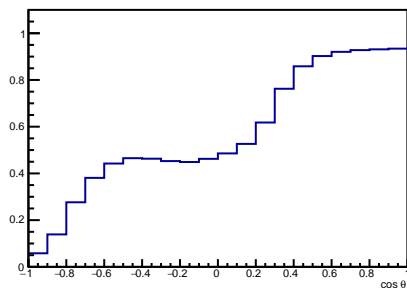
Weighted distribution of cut value



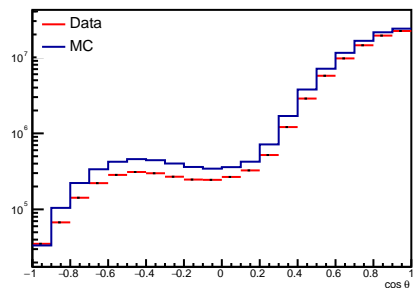
[MC] Angle acceptance of cut: gandalf\_nHits



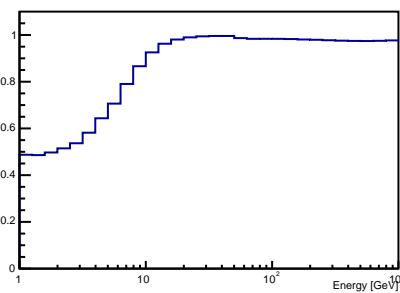
[Data] Angle acceptance of cut: gandalf\_nHits



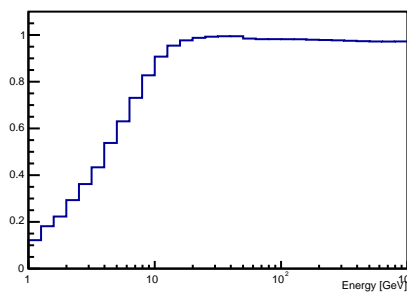
Angle distribution with cut: gandalf\_nHits



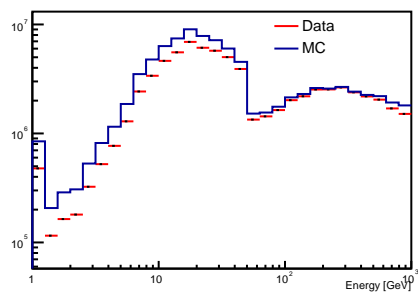
[MC] Energy acceptance of cut: gandalf\_nHits



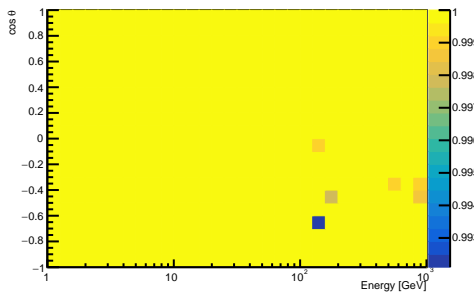
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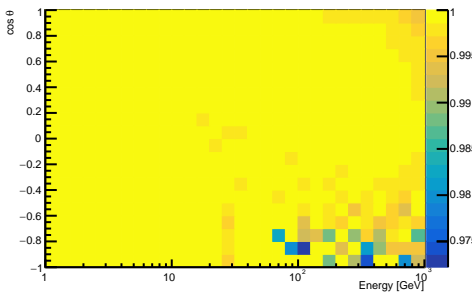
Energy distribution with cut: gandalf\_nHits



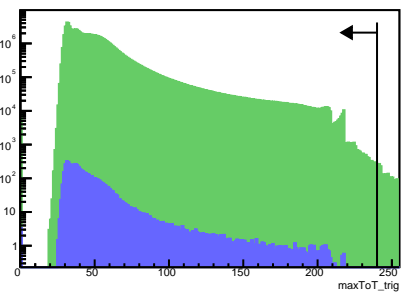
[MC] Acceptance of cut: maxToT\_trig



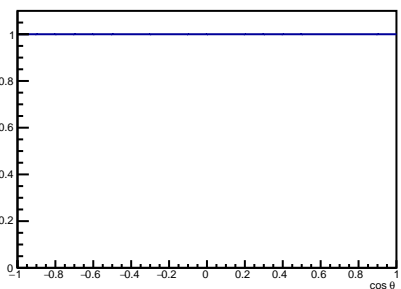
[Data] Acceptance of cut: maxToT\_trig



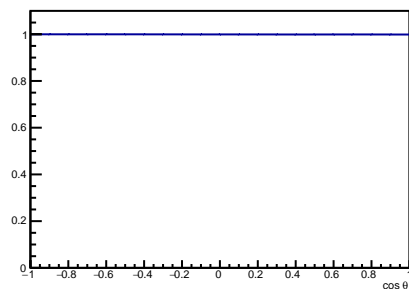
Weighted distribution of cut value



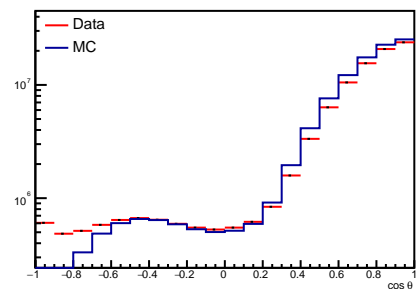
[MC] Angle acceptance of cut: maxToT\_trig



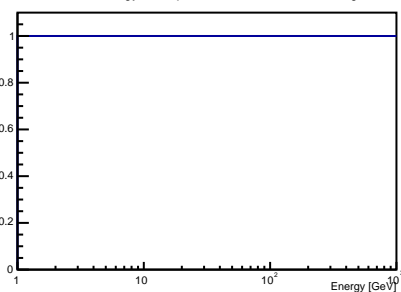
[Data] Angle acceptance of cut: maxToT\_trig



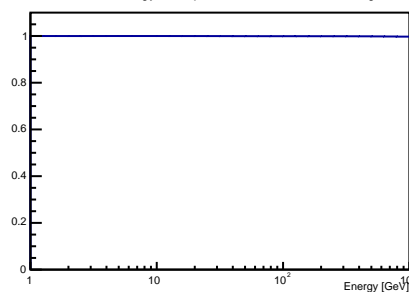
Angle distribution with cut: maxToT\_trig



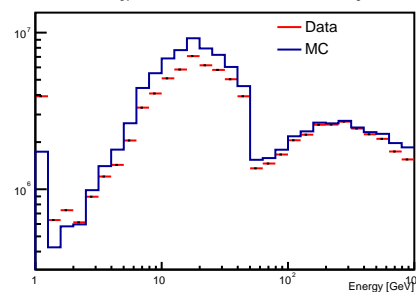
[MC] Energy acceptance of cut: maxToT\_trig



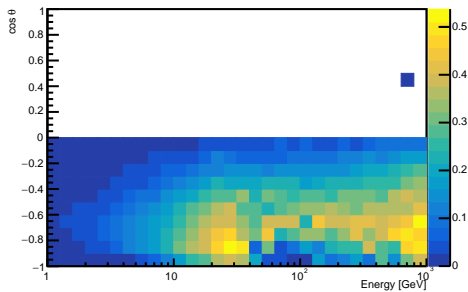
[Data] Energy acceptance of cut: maxToT\_trig



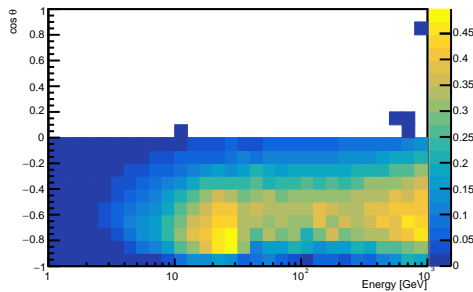
Energy distribution with cut: maxToT\_trig



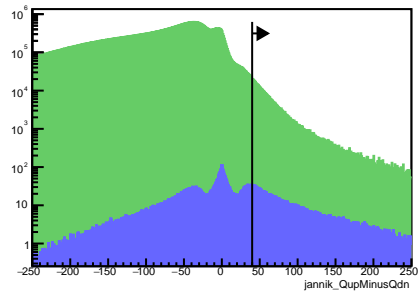
[MC] Acceptance of cut: jannik\_QupMinusQdn



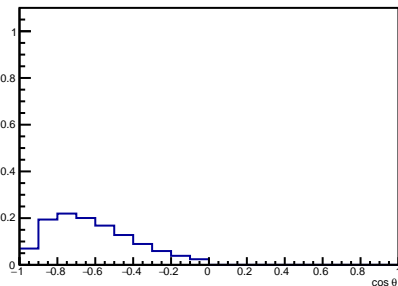
[Data] Acceptance of cut: jannik\_QupMinusQdn



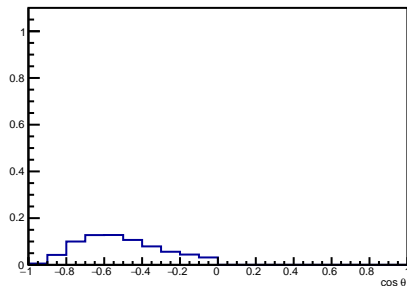
Weighted distribution of cut value



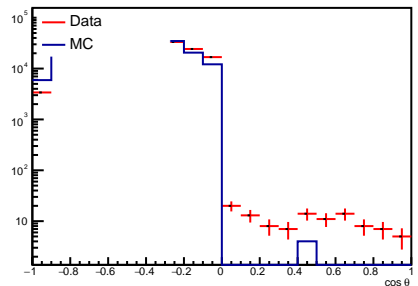
[MC] Angle acceptance of cut: jannik\_QupMinusQdn



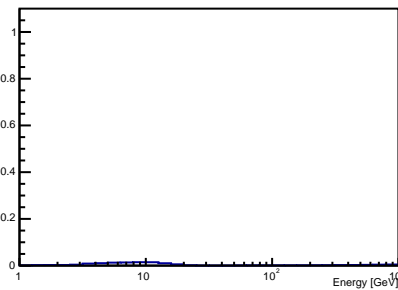
[Data] Angle acceptance of cut: jannik\_QupMinusQdn



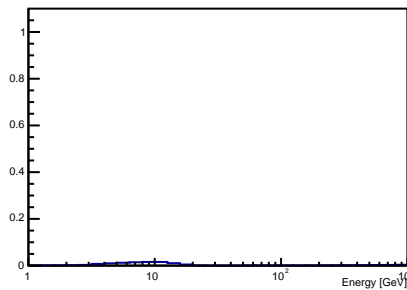
Angle distribution with cut: jannik\_QupMinusQdn



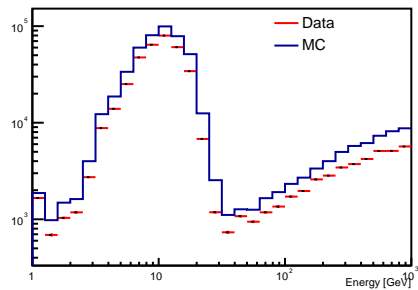
[MC] Energy acceptance of cut: jannik\_QupMinusQdn



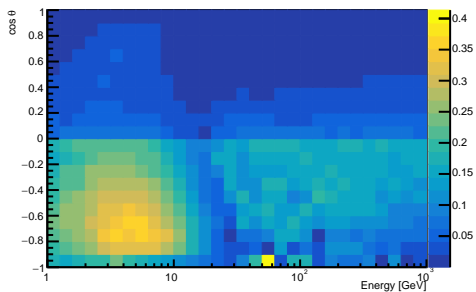
[Data] Energy acceptance of cut: jannik\_QupMinusQdn



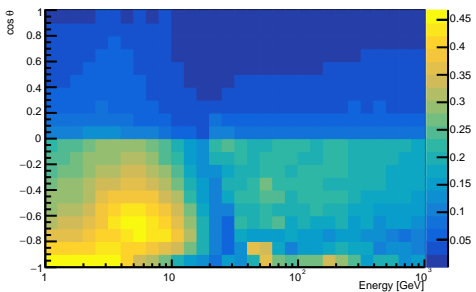
Energy distribution with cut: jannik\_QupMinusQdn



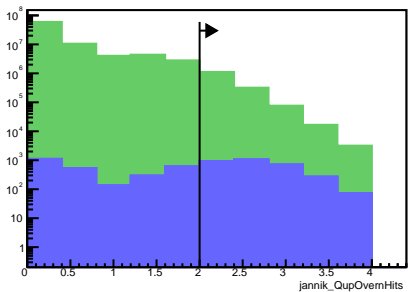
[MC] Acceptance of cut: jannik\_QupOvernHits



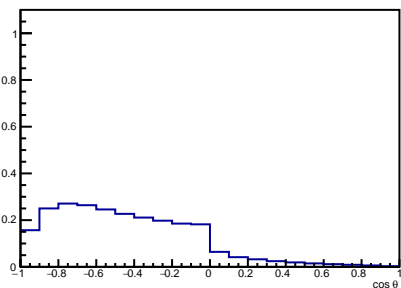
[Data] Acceptance of cut: jannik\_QupOvernHits



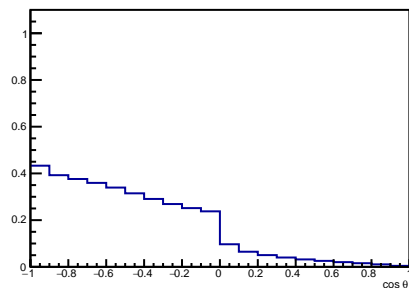
Weighted distribution of cut value



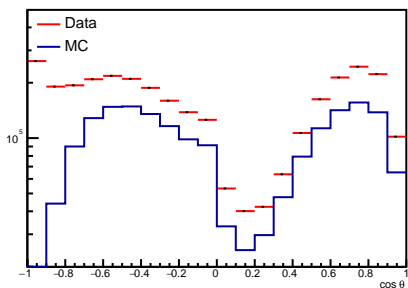
[MC] Angle acceptance of cut: jannik\_QupOvernHits



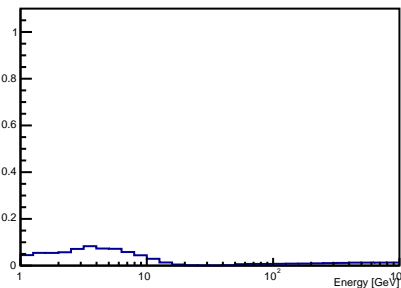
[Data] Angle acceptance of cut: jannik\_QupOvernHits



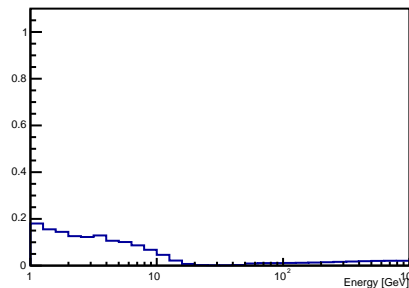
Angle distribution with cut: jannik\_QupOvernHits



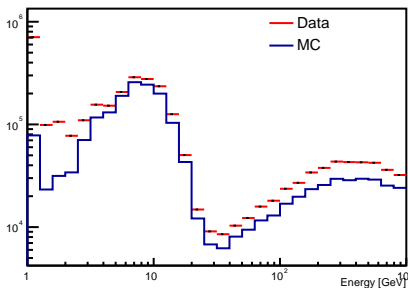
[MC] Energy acceptance of cut: jannik\_QupOvernHits



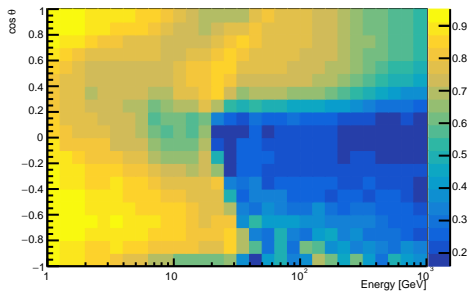
[Data] Energy acceptance of cut: jannik\_QupOvernHits



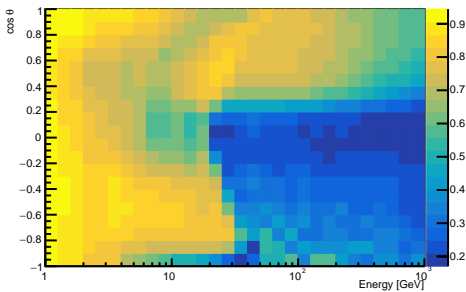
Energy distribution with cut: jannik\_QupOvernHits



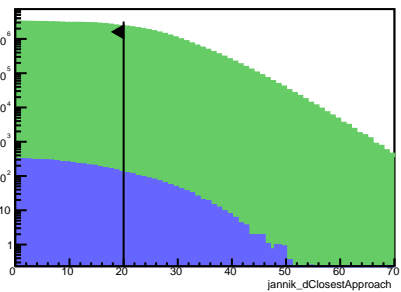
[MC] Acceptance of cut: jannik\_dClosestApproach



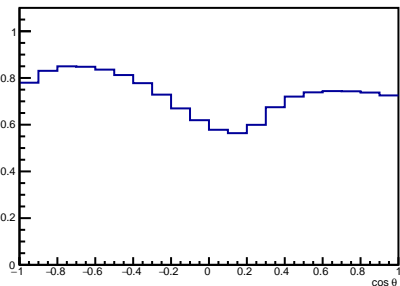
[Data] Acceptance of cut: jannik\_dClosestApproach



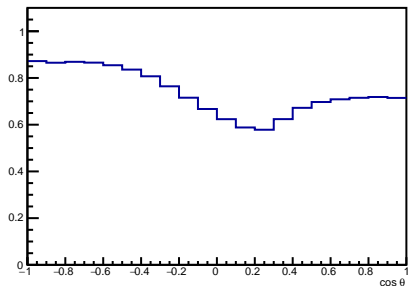
Weighted distribution of cut value



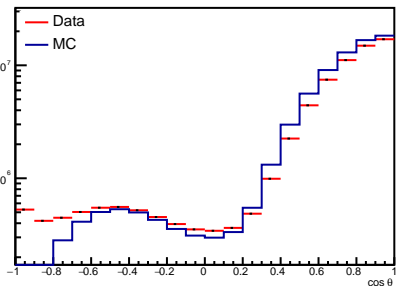
[MC] Angle acceptance of cut: jannik\_dClosestApproach



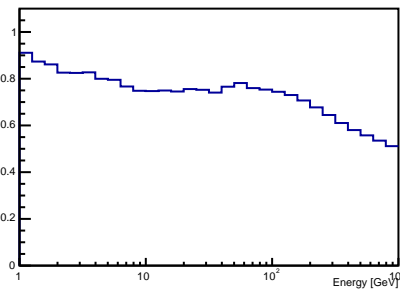
[Data] Angle acceptance of cut: jannik\_dClosestApproach



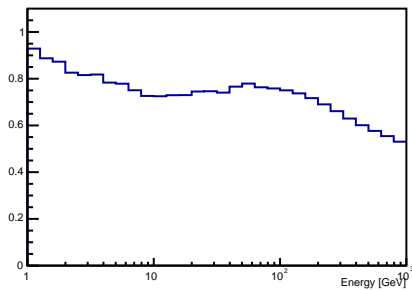
Angle distribution with cut: jannik\_dClosestApproach



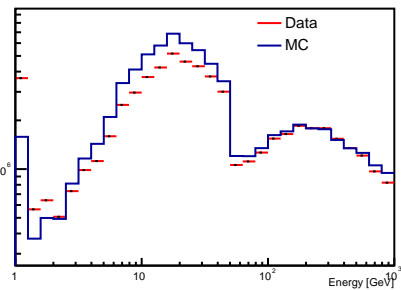
[MC] Energy acceptance of cut: jannik\_dClosestApproach



[Data] Energy acceptance of cut: jannik\_dClosestApproach

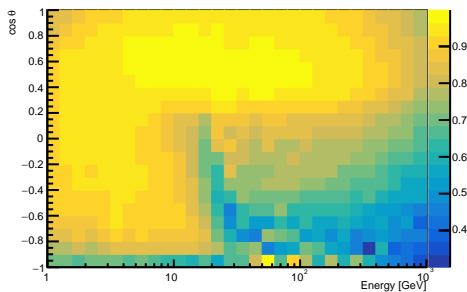


Energy distribution with cut: jannik\_dClosestApproach

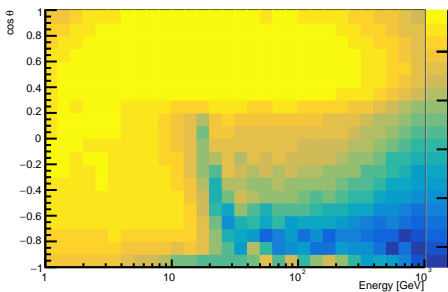




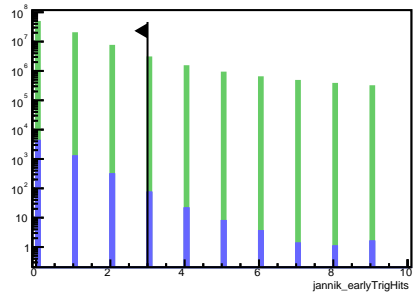
[MC] Acceptance of cut: jannik\_earlyTrigHits



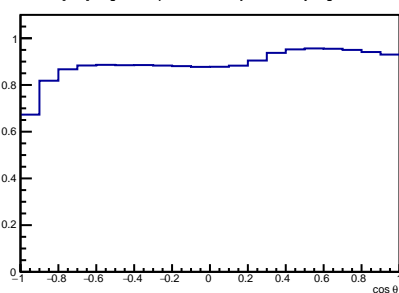
[Data] Acceptance of cut: jannik\_earlyTrigHits



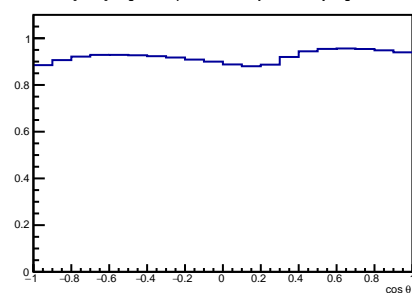
Weighted distribution of cut value



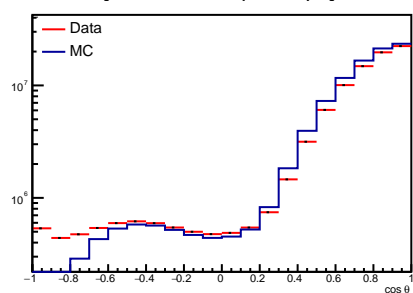
[MC] Angle acceptance of cut: jannik\_earlyTrigHits



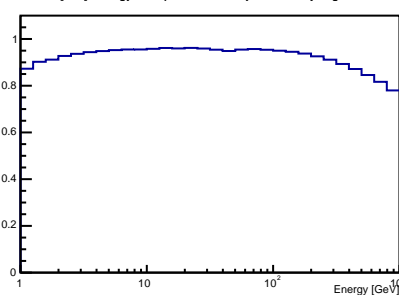
[Data] Angle acceptance of cut: jannik\_earlyTrigHits



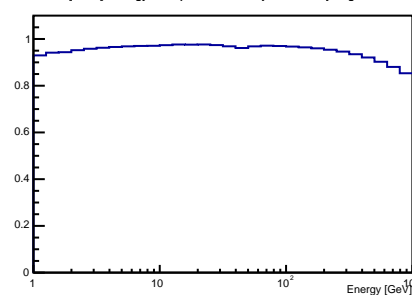
Angle distribution with cut: jannik\_earlyTrigHits



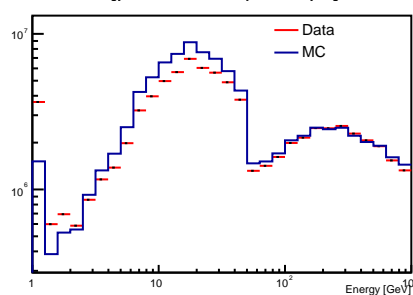
[MC] Energy acceptance of cut: jannik\_earlyTrigHits



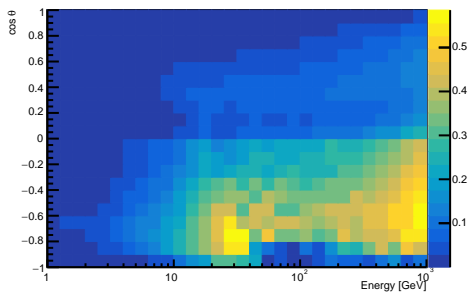
[Data] Energy acceptance of cut: jannik\_earlyTrigHits



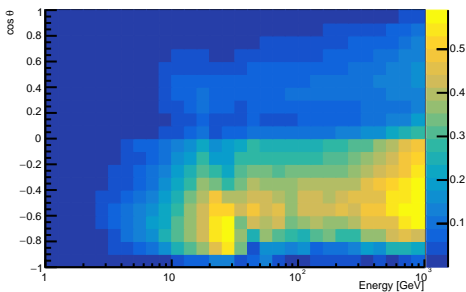
Energy distribution with cut: jannik\_earlyTrigHits



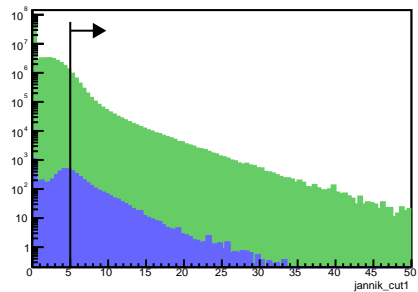
[MC] Acceptance of cut: jannik\_cut1



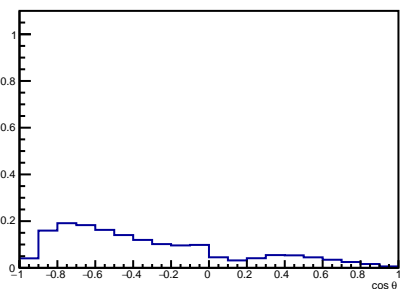
[Data] Acceptance of cut: jannik\_cut1



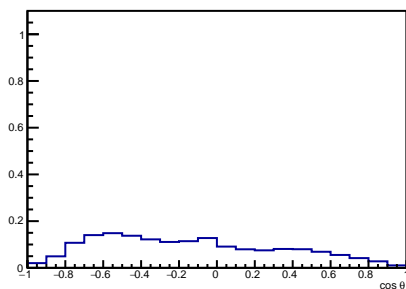
Weighted distribution of cut value



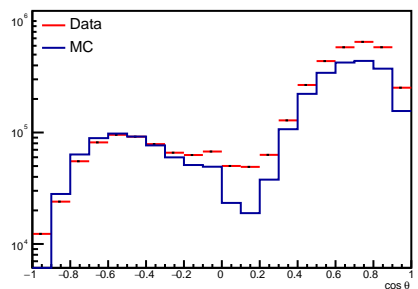
[MC] Angle acceptance of cut: jannik\_cut1



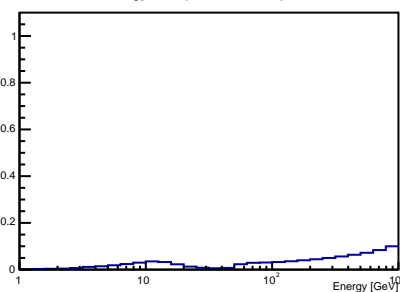
[Data] Angle acceptance of cut: jannik\_cut1



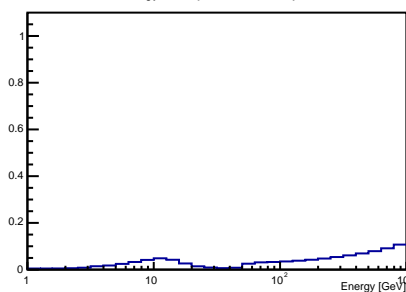
Angle distribution with cut: jannik\_cut1



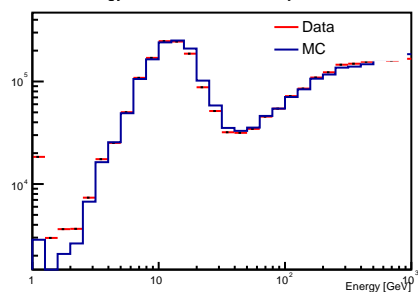
[MC] Energy acceptance of cut: jannik\_cut1



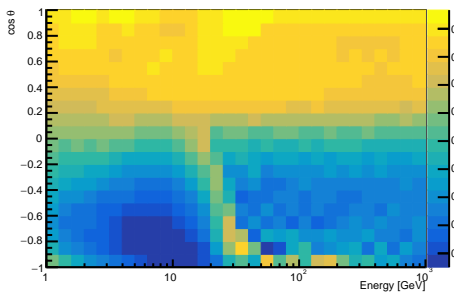
[Data] Energy acceptance of cut: jannik\_cut1



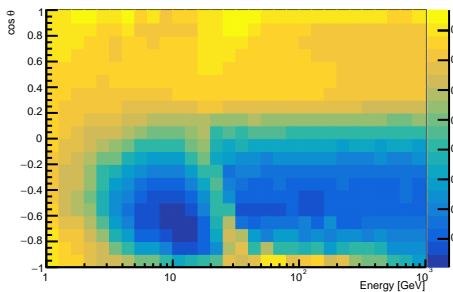
Energy distribution with cut: jannik\_cut1



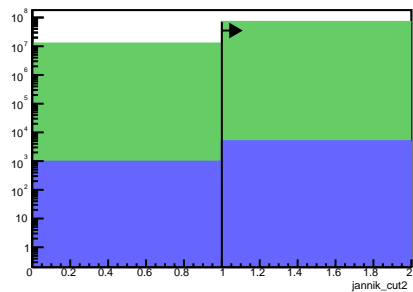
[MC] Acceptance of cut: jannik\_cut2



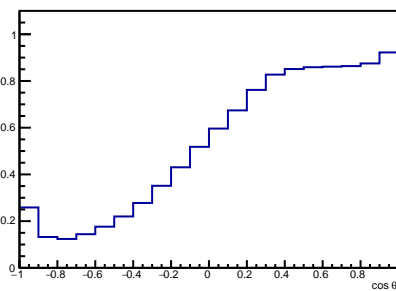
[Data] Acceptance of cut: jannik\_cut2



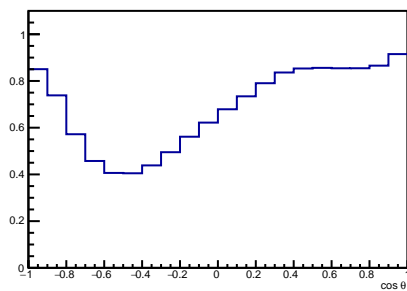
Weighted distribution of cut value



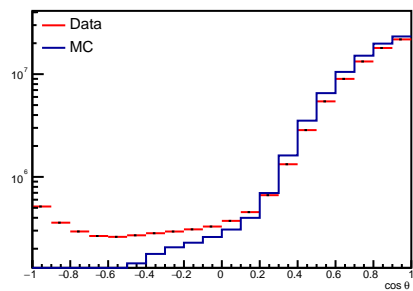
[MC] Angle acceptance of cut: jannik\_cut2



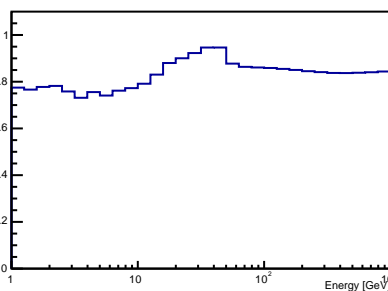
[Data] Angle acceptance of cut: jannik\_cut2



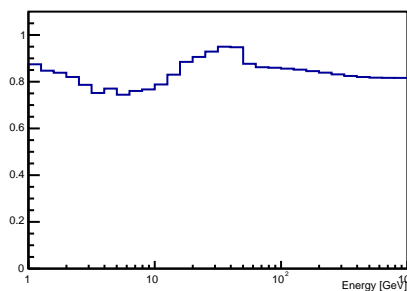
Angle distribution with cut: jannik\_cut2



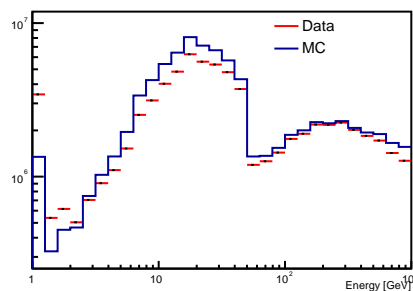
[MC] Energy acceptance of cut: jannik\_cut2



[Data] Energy acceptance of cut: jannik\_cut2



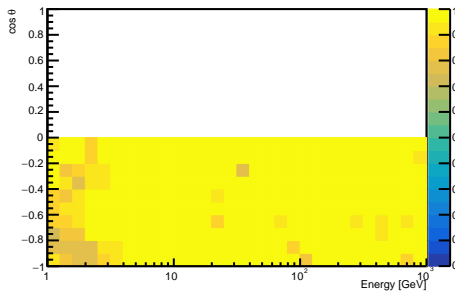
Energy distribution with cut: jannik\_cut2



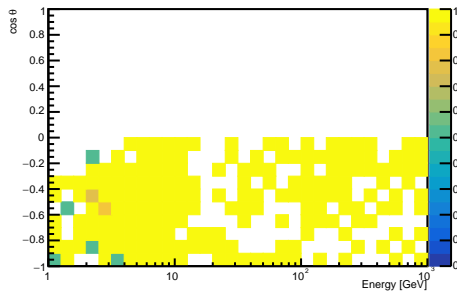
# Applying N-1 cuts

The plot shows the impact of the final cut on the data/MC selection

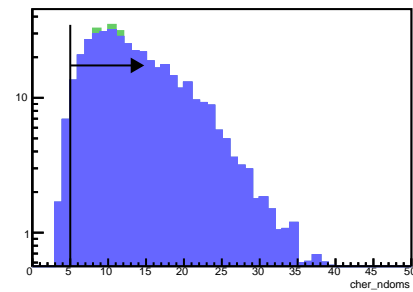
[MC] Acceptance of last cut: cher\_ndoms



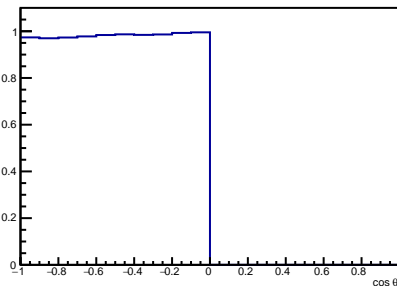
[Data] Acceptance of last cut: cher\_ndoms



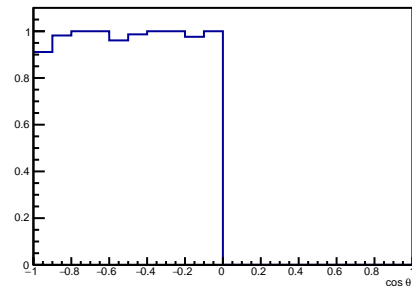
Weighted distribution of cut value after applying all other cuts



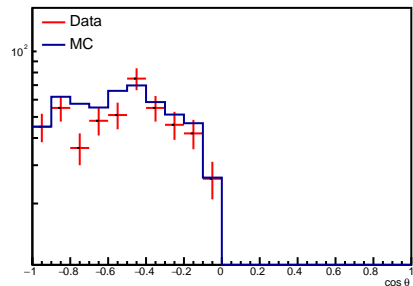
[MC] Angle acceptance of last cut: cher\_ndoms



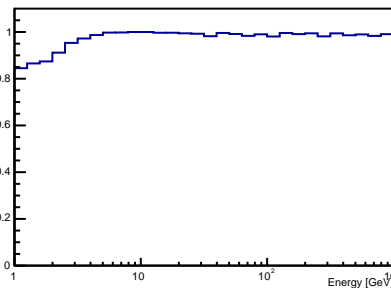
[Data] Angle acceptance of last cut: cher\_ndoms



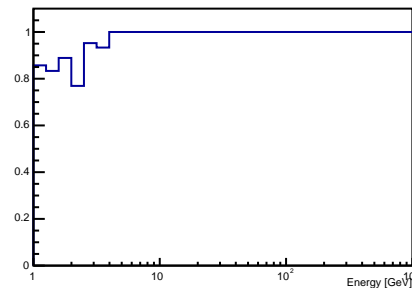
Angle distribution before last cut: cher\_ndoms



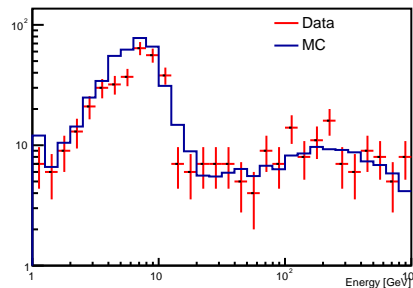
[MC] Energy acceptance of last cut: cher\_ndoms



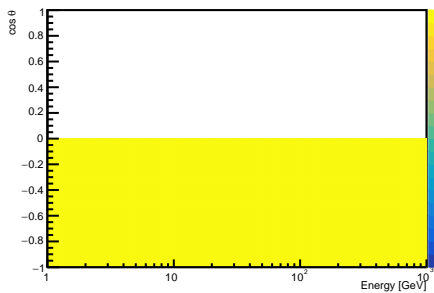
[Data] Energy acceptance of last cut: cher\_ndoms



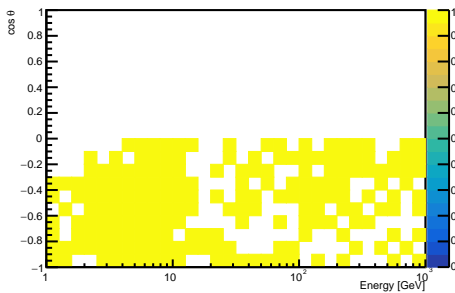
Energy distribution before last cut: cher\_ndoms



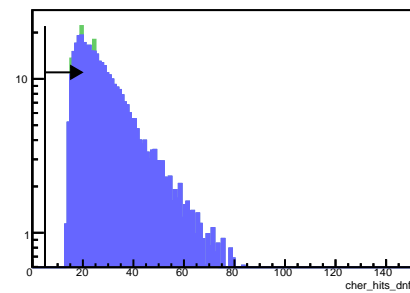
[MC] Acceptance of last cut: cher\_hits\_dnf



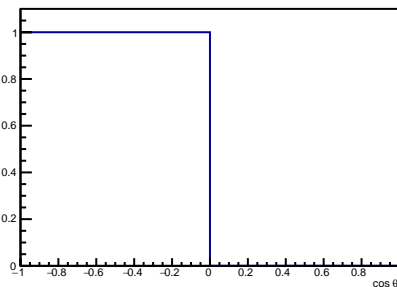
[Data] Acceptance of last cut: cher\_hits\_dnf



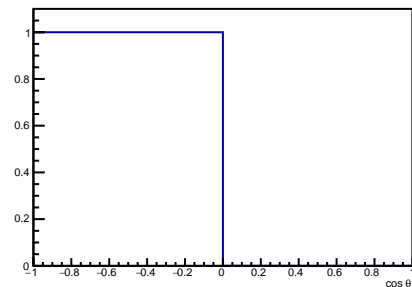
Weighted distribution of cut value after applying all other cuts



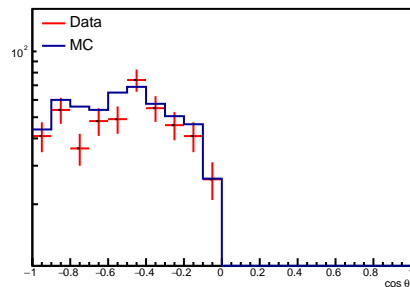
[MC] Angle acceptance of last cut: cher\_hits\_dnf



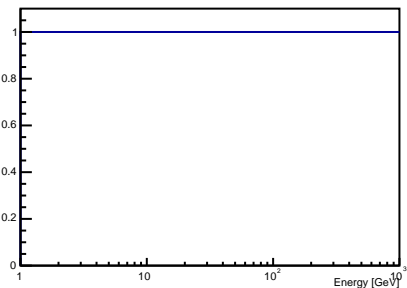
[Data] Angle acceptance of last cut: cher\_hits\_dnf



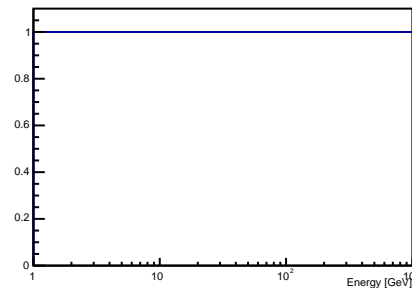
Angle distribution before last cut: cher\_hits\_dnf



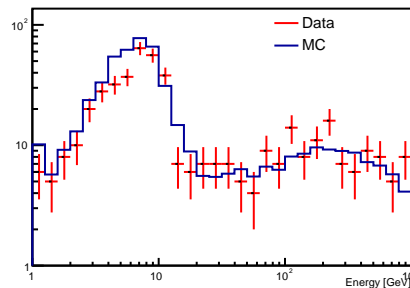
[MC] Energy acceptance of last cut: cher\_hits\_dnf



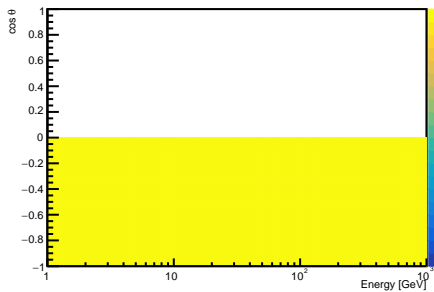
[Data] Energy acceptance of last cut: cher\_hits\_dnf



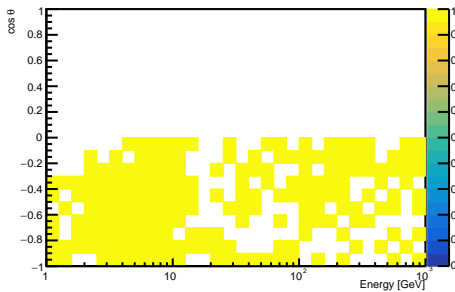
Energy distribution before last cut: cher\_hits\_dnf



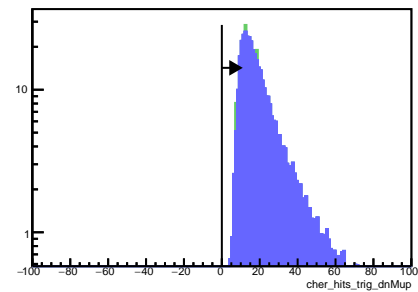
[MC] Acceptance of last cut: cher\_hits\_trig\_dnMup



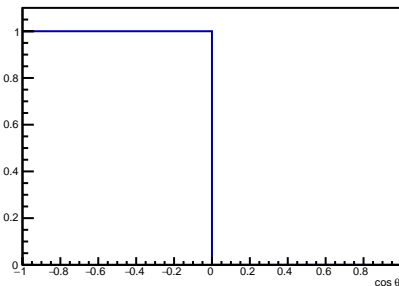
[Data] Acceptance of last cut: cher\_hits\_trig\_dnMup



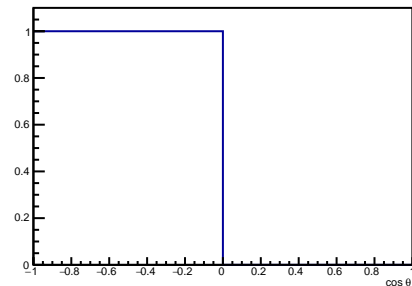
Weighted distribution of cut value after applying all other cuts



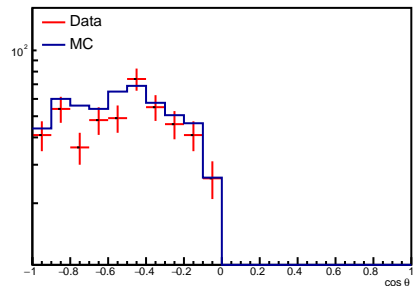
[MC] Angle acceptance of last cut: cher\_hits\_trig\_dnMup



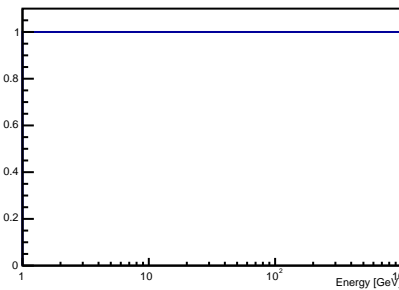
[Data] Angle acceptance of last cut: cher\_hits\_trig\_dnMup



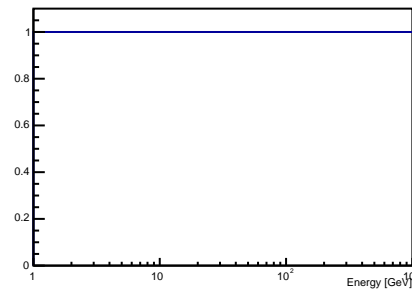
Angle distribution before last cut: cher\_hits\_trig\_dnMup



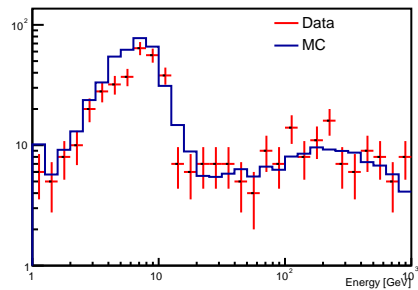
[MC] Energy acceptance of last cut: cher\_hits\_trig\_dnMup



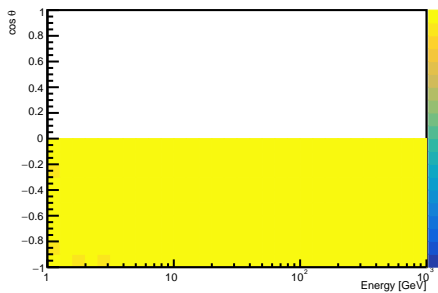
[Data] Energy acceptance of last cut: cher\_hits\_trig\_dnMup



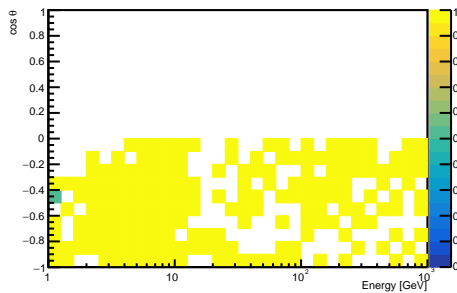
Energy distribution before last cut: cher\_hits\_trig\_dnMup



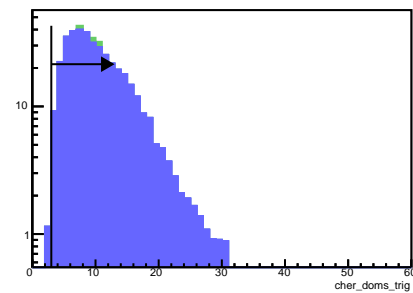
[MC] Acceptance of last cut: cher\_doms\_trig



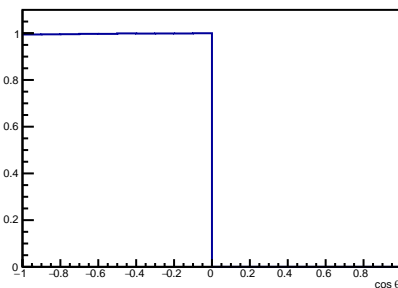
[Data] Acceptance of last cut: cher\_doms\_trig



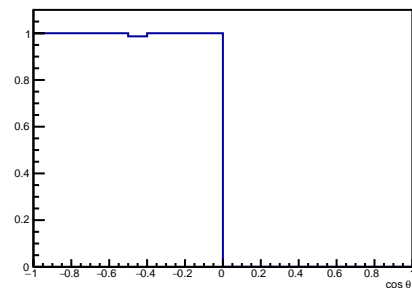
Weighted distribution of cut value after applying all other cuts



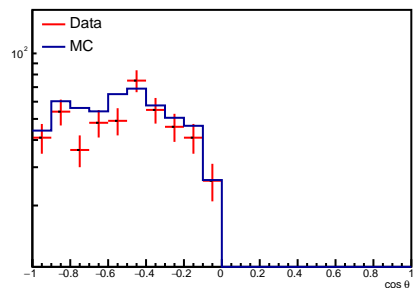
[MC] Angle acceptance of last cut: cher\_doms\_trig



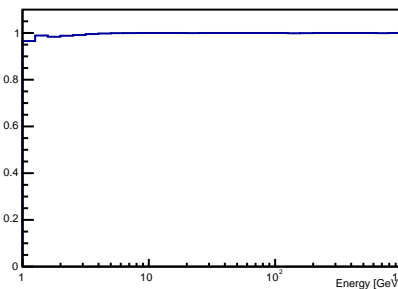
[Data] Angle acceptance of last cut: cher\_doms\_trig



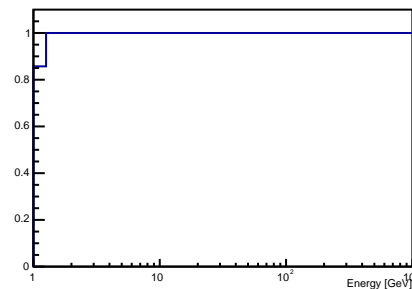
Angle distribution before last cut: cher\_doms\_trig



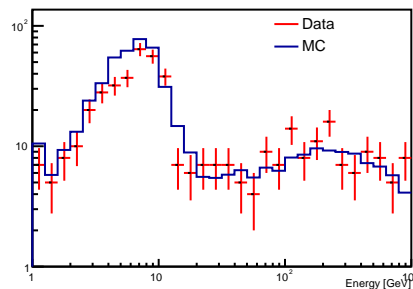
[MC] Energy acceptance of last cut: cher\_doms\_trig



[Data] Energy acceptance of last cut: cher\_doms\_trig

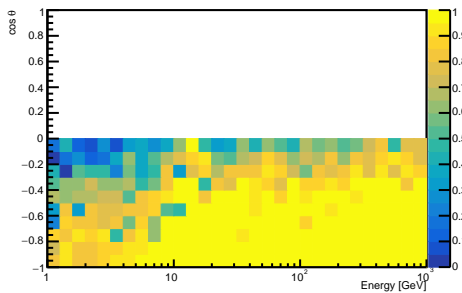


Energy distribution before last cut: cher\_doms\_trig

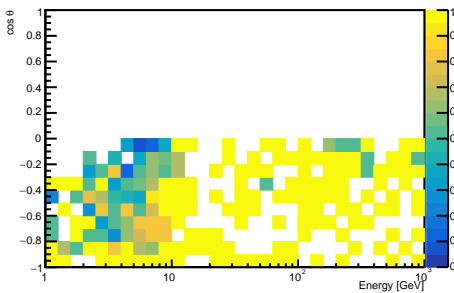




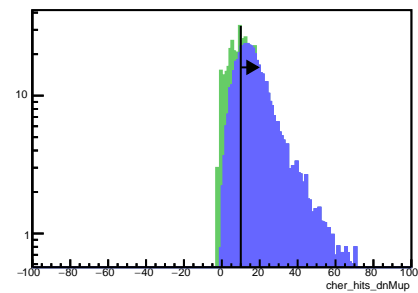
[MC] Acceptance of last cut: cher\_hits\_dnMup



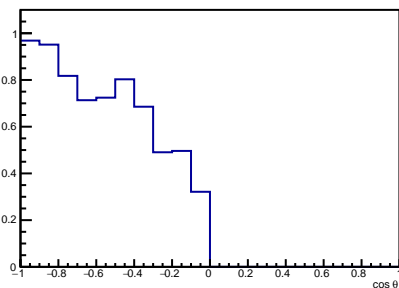
[Data] Acceptance of last cut: cher\_hits\_dnMup



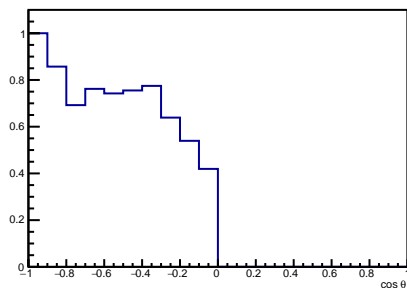
Weighted distribution of cut value after applying all other cuts



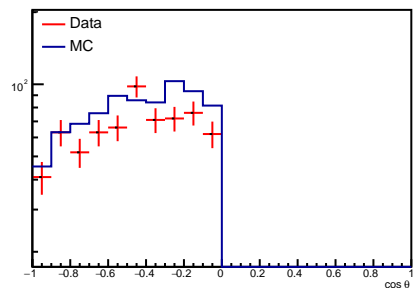
[MC] Angle acceptance of last cut: cher\_hits\_dnMup



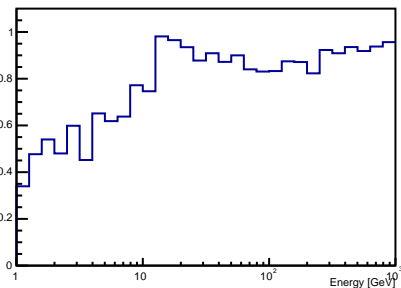
[Data] Angle acceptance of last cut: cher\_hits\_dnMup



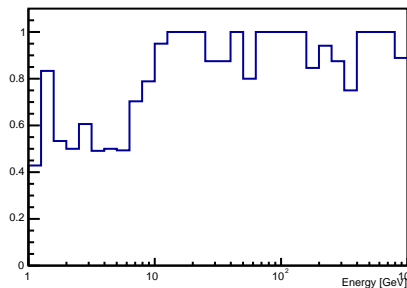
Angle distribution before last cut: cher\_hits\_dnMup



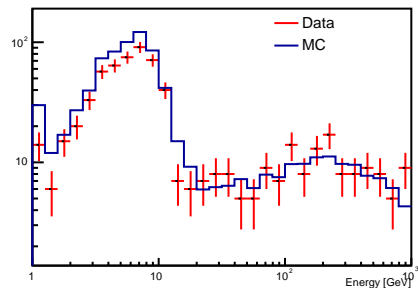
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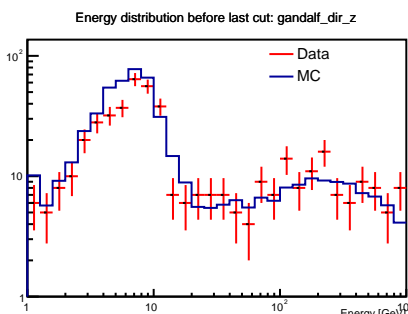
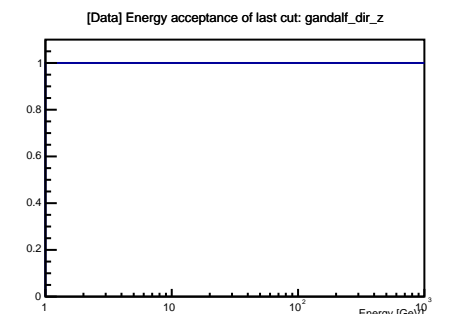
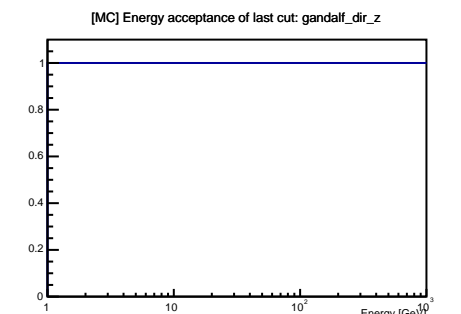
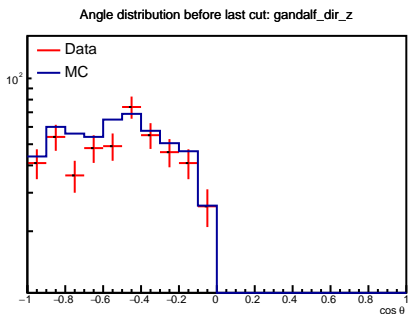
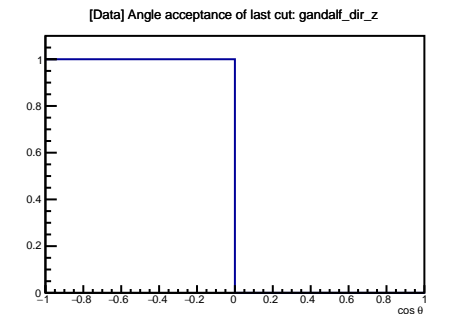
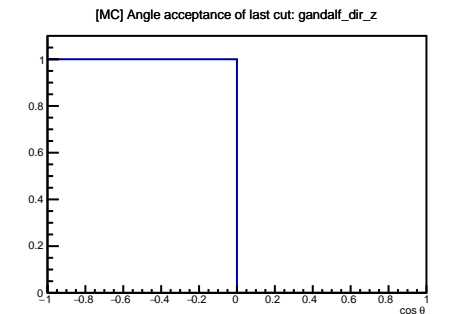
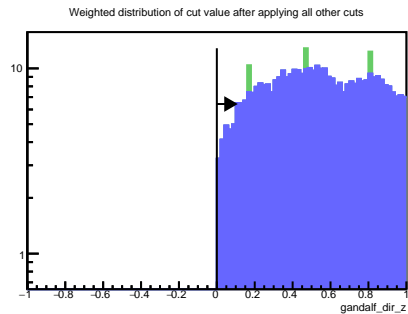
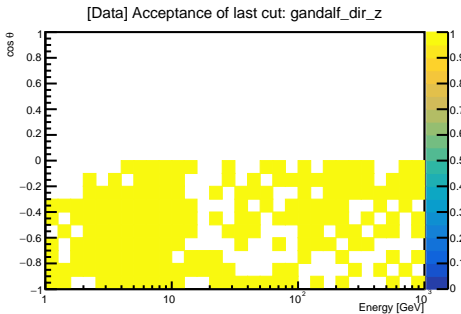
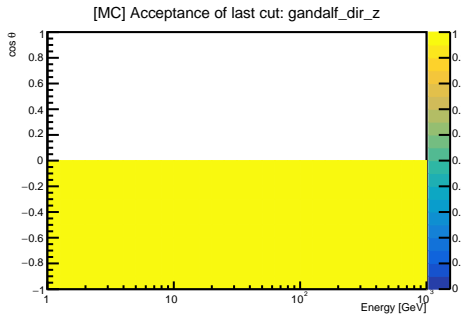


[Data] Energy acceptance of last cut: cher\_hits\_dnMup

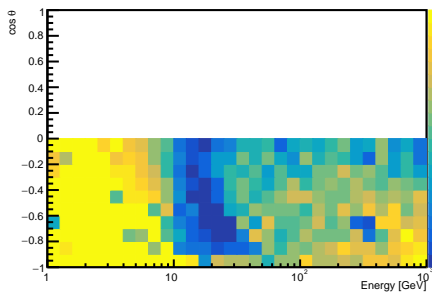


Energy distribution before last cut: cher\_hits\_dnMup

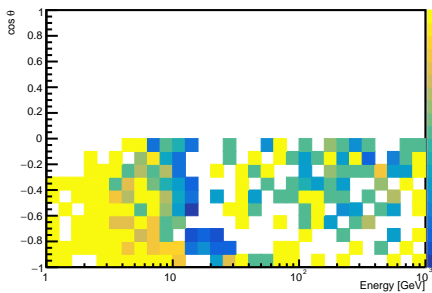




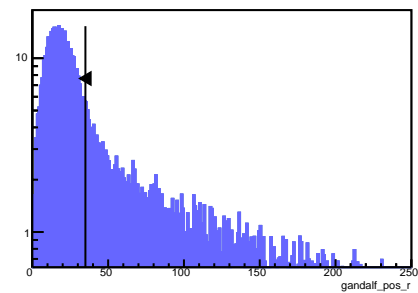
[MC] Acceptance of last cut: gandalf\_pos\_r



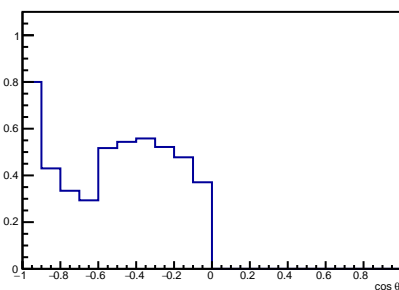
[Data] Acceptance of last cut: gandalf\_pos\_r



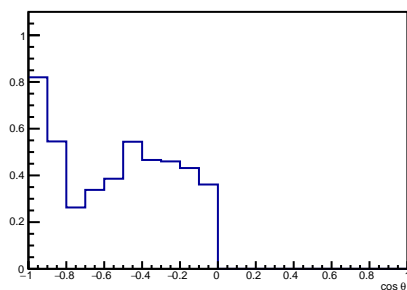
Weighted distribution of cut value after applying all other cuts



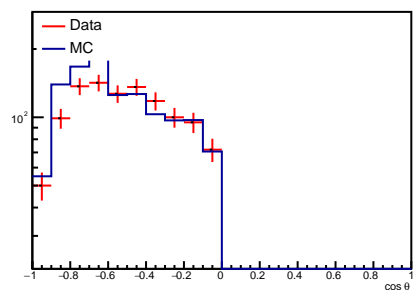
[MC] Angle acceptance of last cut: gandalf\_pos\_r



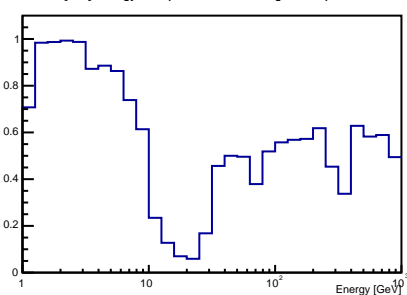
[Data] Angle acceptance of last cut: gandalf\_pos\_r



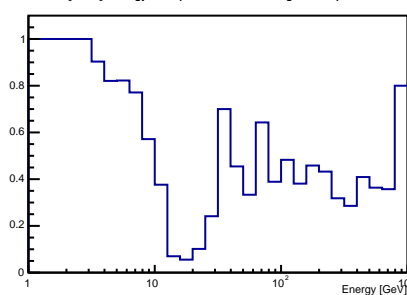
Angle distribution before last cut: gandalf\_pos\_r



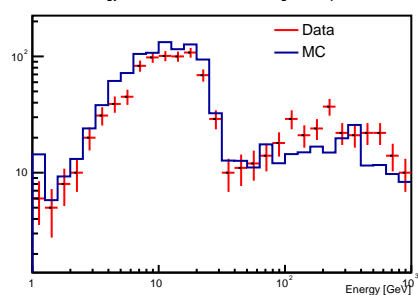
[MC] Energy acceptance of last cut: gandalf\_pos\_r



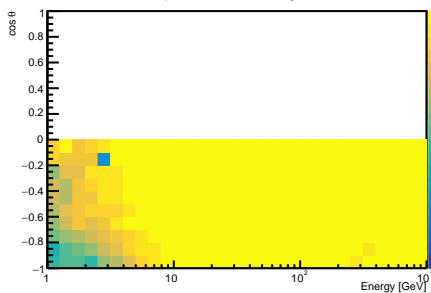
[Data] Energy acceptance of last cut: gandalf\_pos\_r



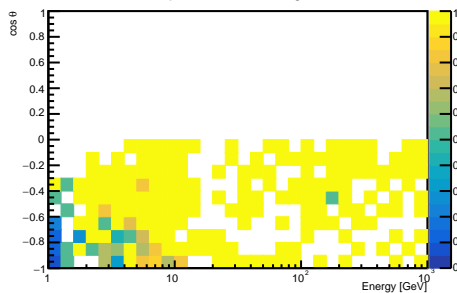
Energy distribution before last cut: gandalf\_pos\_r



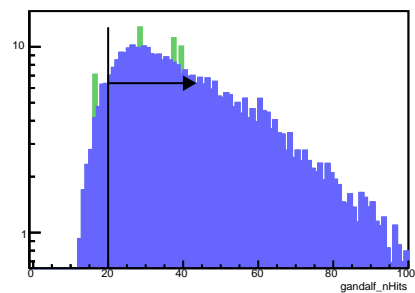
[MC] Acceptance of last cut: gandalf\_nHits



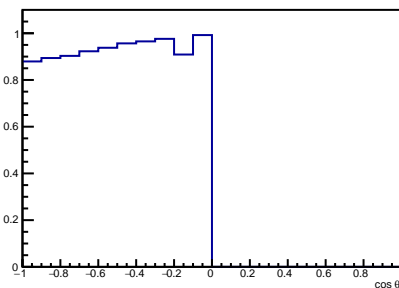
[Data] Acceptance of last cut: gandalf\_nHits



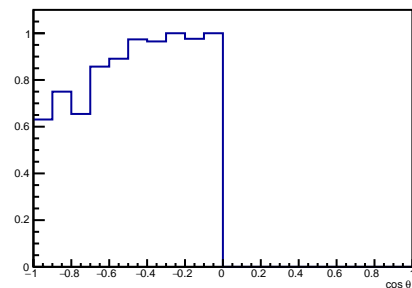
Weighted distribution of cut value after applying all other cuts



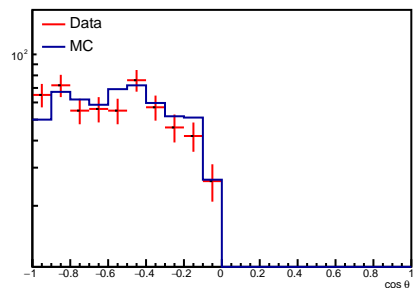
[MC] Angle acceptance of last cut: gandalf\_nHits



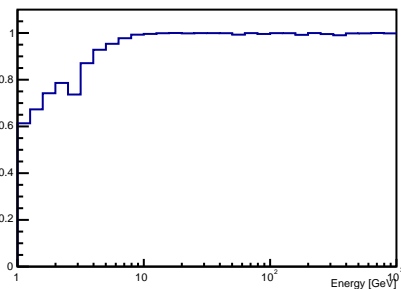
[Data] Angle acceptance of last cut: gandalf\_nHits



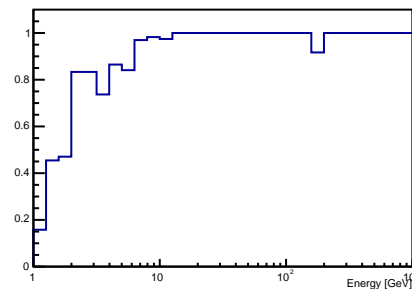
Angle distribution before last cut: gandalf\_nHits



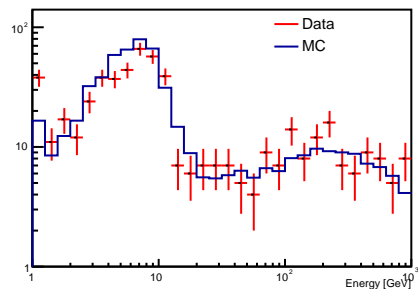
[MC] Energy acceptance of last cut: gandalf\_nHits

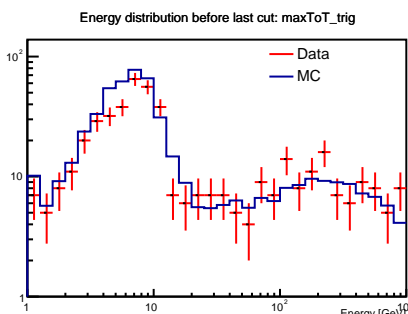
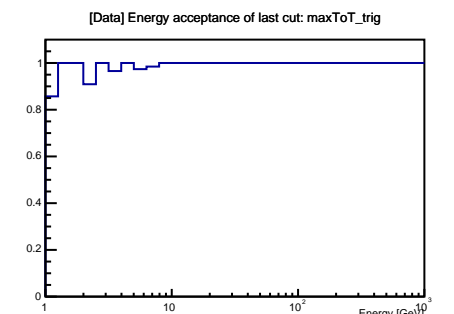
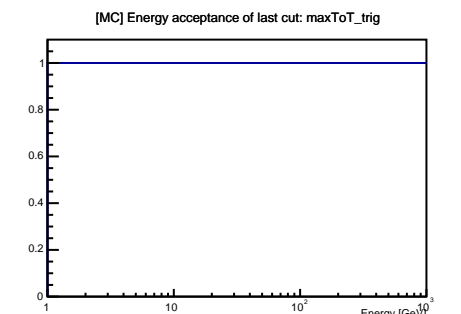
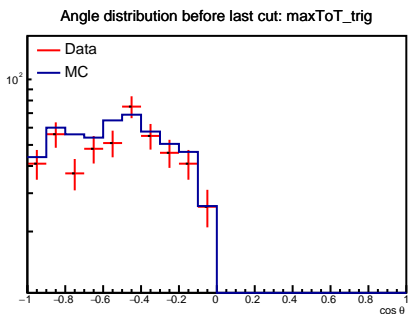
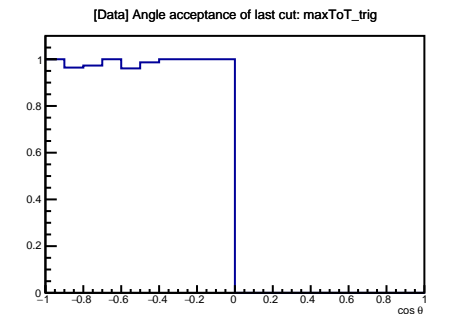
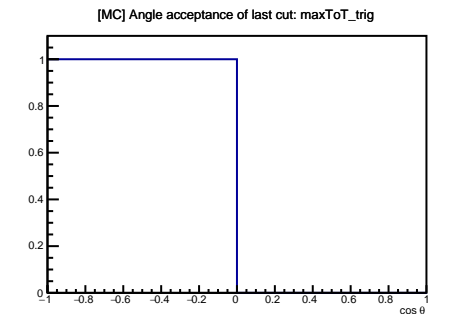
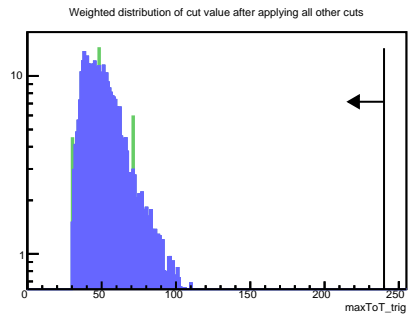
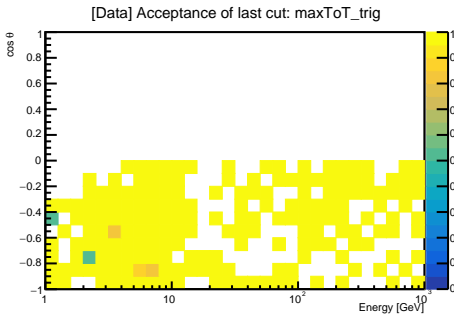
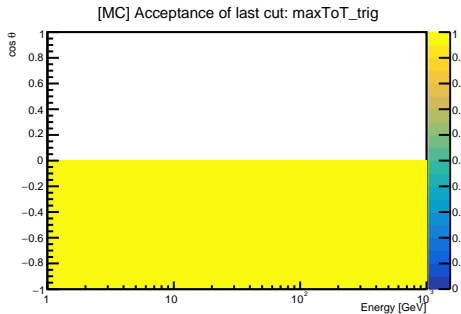


[Data] Energy acceptance of last cut: gandalf\_nHits

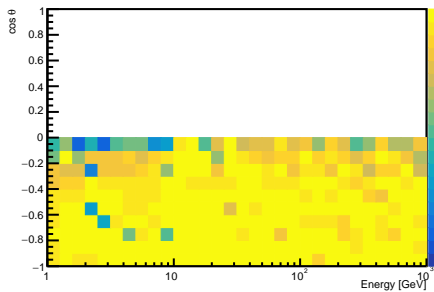


Energy distribution before last cut: gandalf\_nHits

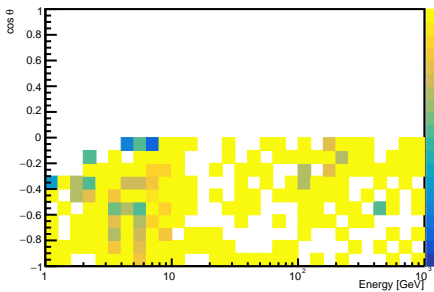




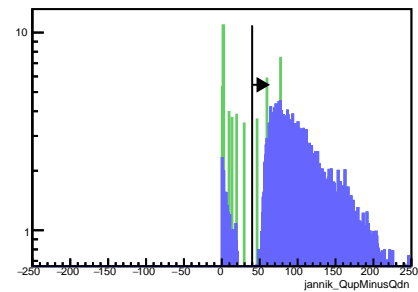
[MC] Acceptance of last cut: jannik\_QupMinusQdn



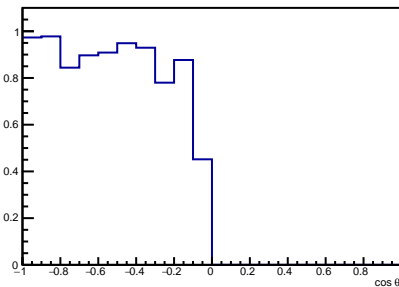
[Data] Acceptance of last cut: jannik\_QupMinusQdn



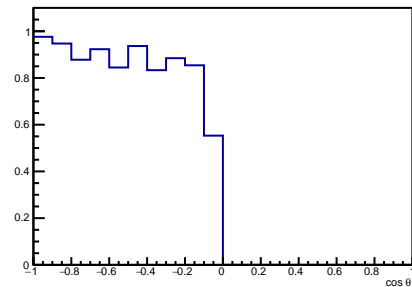
Weighted distribution of cut value after applying all other cuts



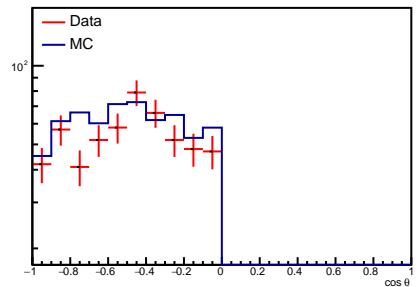
[MC] Angle acceptance of last cut: jannik\_QupMinusQdn



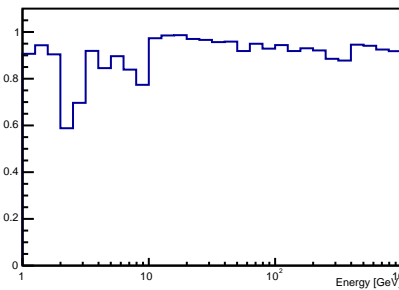
[Data] Angle acceptance of last cut: jannik\_QupMinusQdn



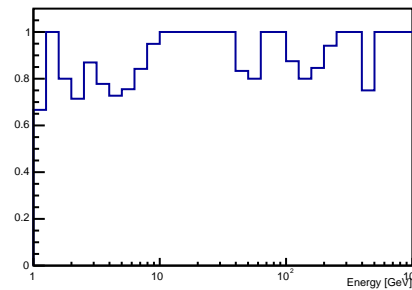
Angle distribution before last cut: jannik\_QupMinusQdn



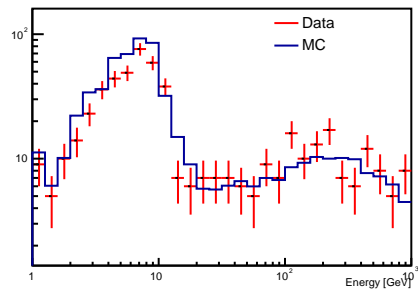
[MC] Energy acceptance of last cut: jannik\_QupMinusQdn



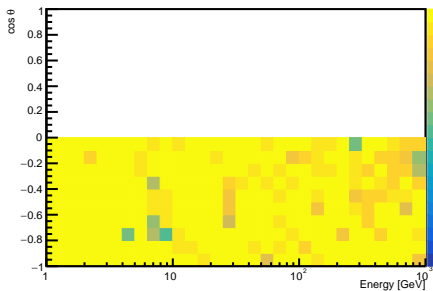
[Data] Energy acceptance of last cut: jannik\_QupMinusQdn



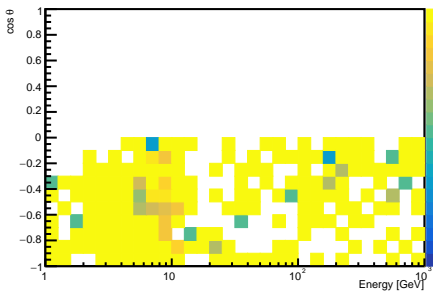
Energy distribution before last cut: jannik\_QupMinusQdn



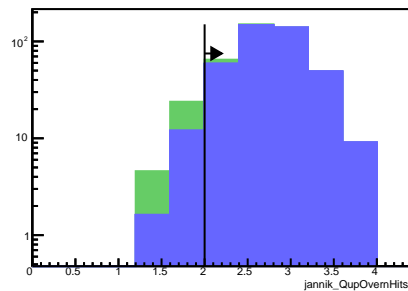
[MC] Acceptance of last cut: jannik\_QupOvernHits



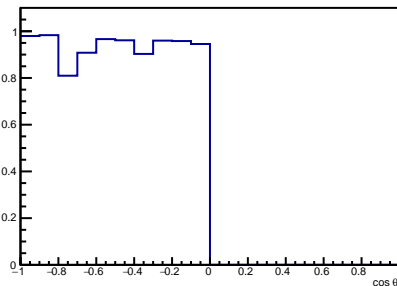
[Data] Acceptance of last cut: jannik\_QupOvernHits



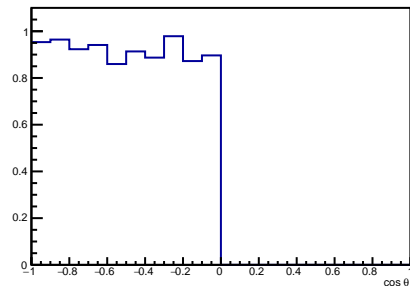
Weighted distribution of cut value after applying all other cuts



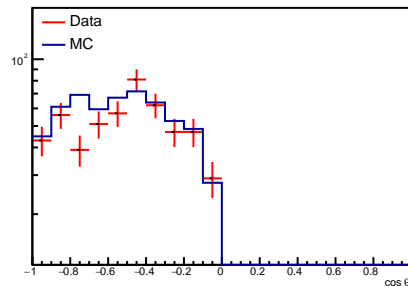
[MC] Angle acceptance of last cut: jannik\_QupOvernHits



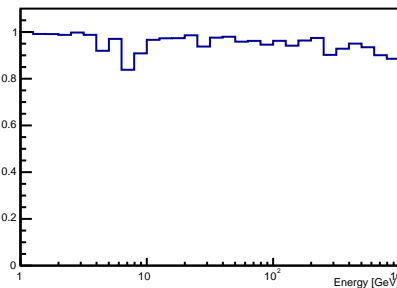
[Data] Angle acceptance of last cut: jannik\_QupOvernHits



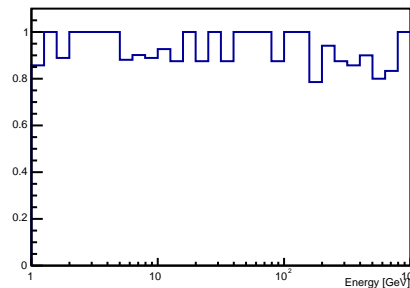
Angle distribution before last cut: jannik\_QupOvernHits



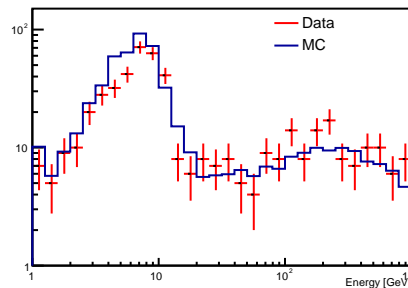
[MC] Energy acceptance of last cut: jannik\_QupOvernHits



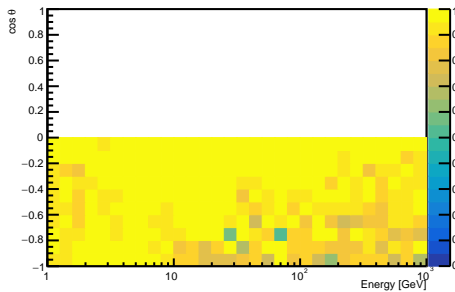
[Data] Energy acceptance of last cut: jannik\_QupOvernHits



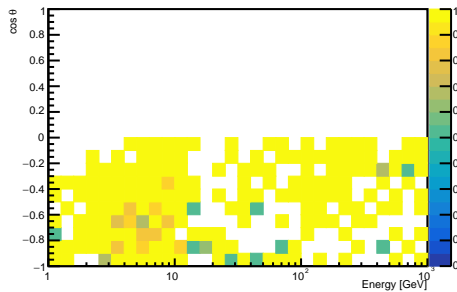
Energy distribution before last cut: jannik\_QupOvernHits



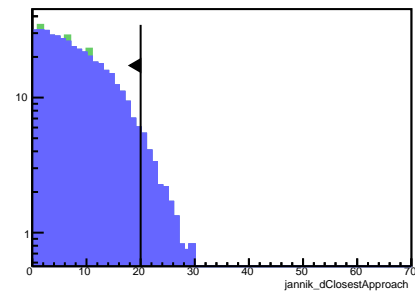
[MC] Acceptance of last cut: jannik\_dClosestApproach



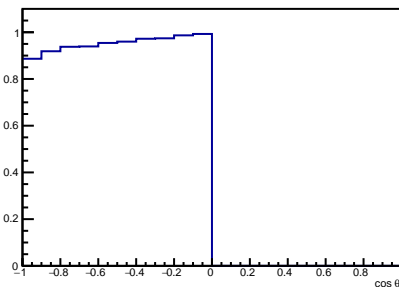
[Data] Acceptance of last cut: jannik\_dClosestApproach



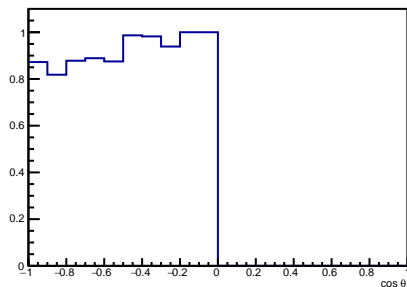
Weighted distribution of cut value after applying all other cuts



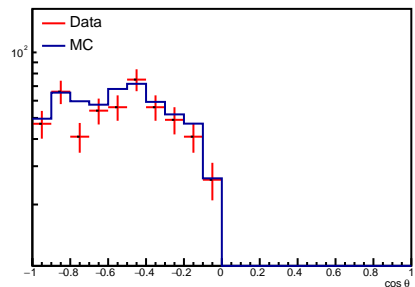
[MC] Angle acceptance of last cut: jannik\_dClosestApproach



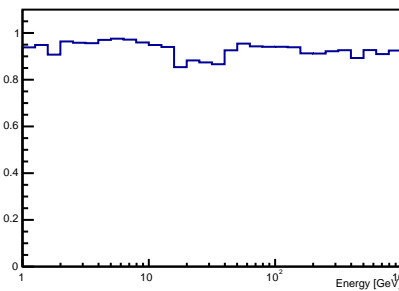
[Data] Angle acceptance of last cut: jannik\_dClosestApproach



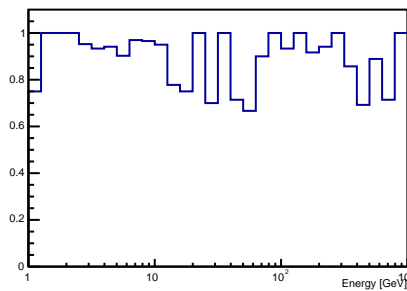
Angle distribution before last cut: jannik\_dClosestApproach



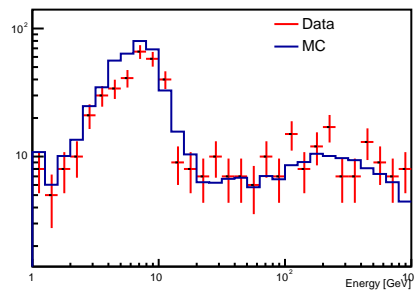
[MC] Energy acceptance of last cut: jannik\_dClosestApproach



[Data] Energy acceptance of last cut: jannik\_dClosestApproach

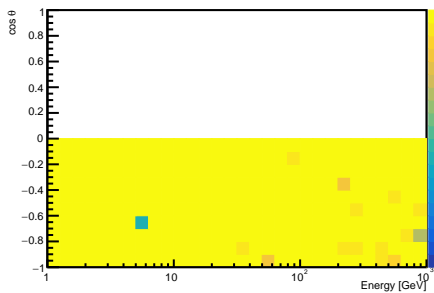


Energy distribution before last cut: jannik\_dClosestApproach

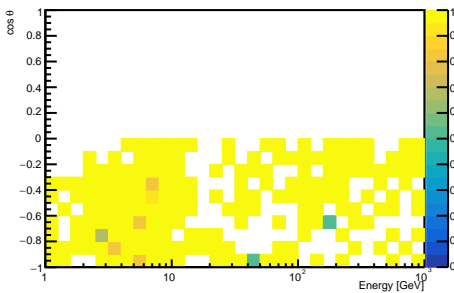




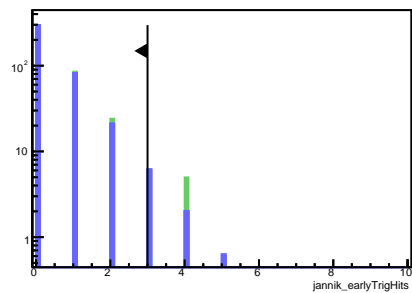
[MC] Acceptance of last cut: jannik\_earlyTrigHits



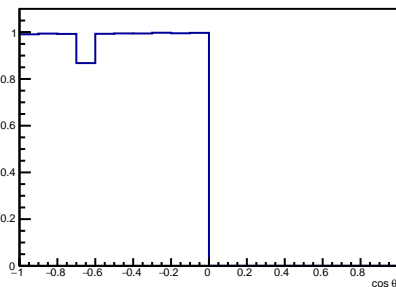
[Data] Acceptance of last cut: jannik\_earlyTrigHits



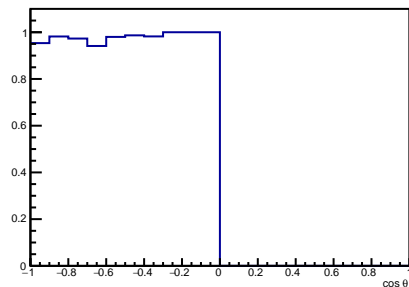
Weighted distribution of cut value after applying all other cuts



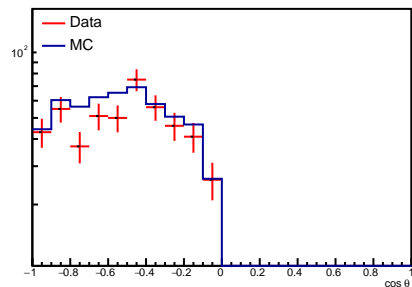
[MC] Angle acceptance of last cut: jannik\_earlyTrigHits



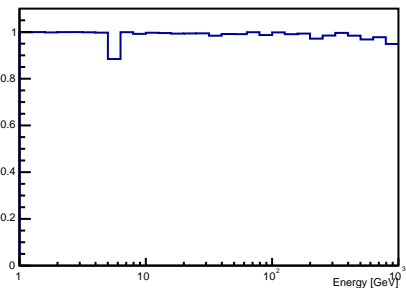
[Data] Angle acceptance of last cut: jannik\_earlyTrigHits



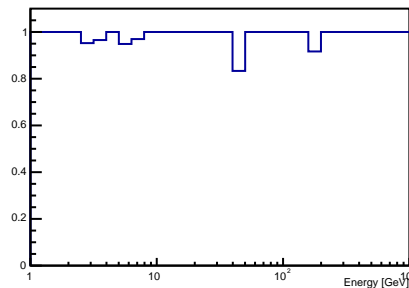
Angle distribution before last cut: jannik\_earlyTrigHits



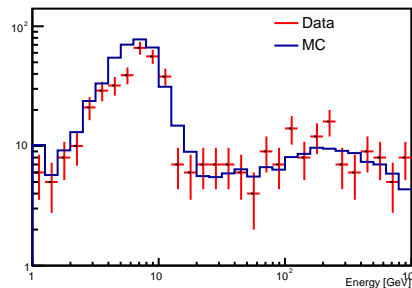
[MC] Energy acceptance of last cut: jannik\_earlyTrigHits



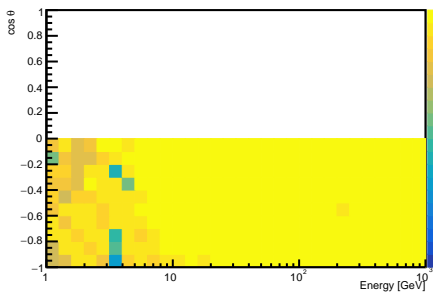
[Data] Energy acceptance of last cut: jannik\_earlyTrigHits



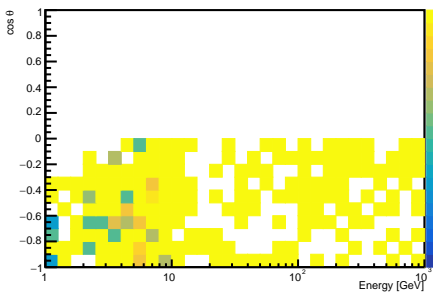
Energy distribution before last cut: jannik\_earlyTrigHits



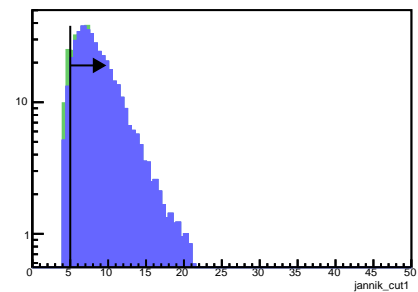
[MC] Acceptance of last cut: jannik\_cut1



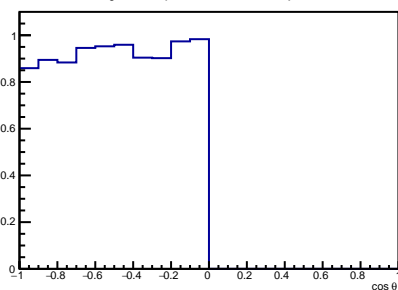
[Data] Acceptance of last cut: jannik\_cut1



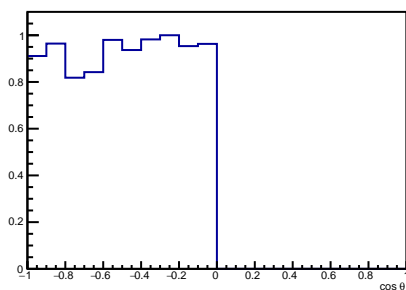
Weighted distribution of cut value after applying all other cuts



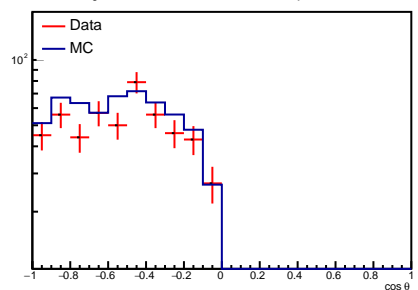
[MC] Angle acceptance of last cut: jannik\_cut1



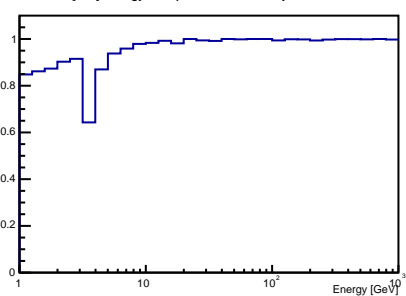
[Data] Angle acceptance of last cut: jannik\_cut1



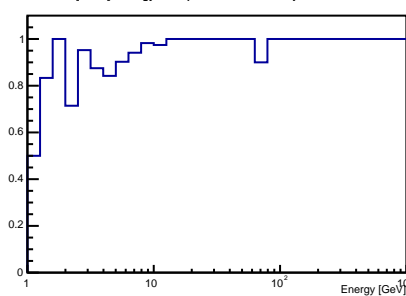
Angle distribution before last cut: jannik\_cut1



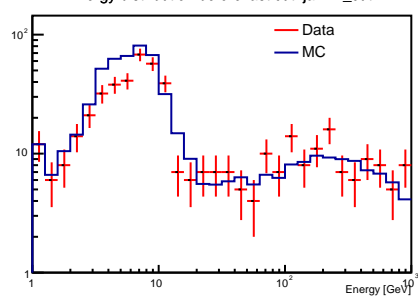
[MC] Energy acceptance of last cut: jannik\_cut1



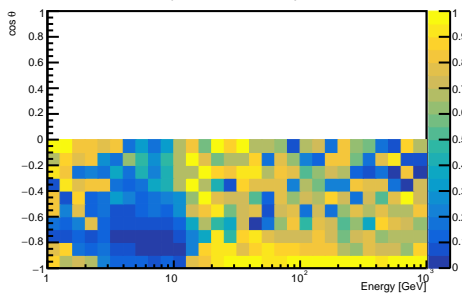
[Data] Energy acceptance of last cut: jannik\_cut1



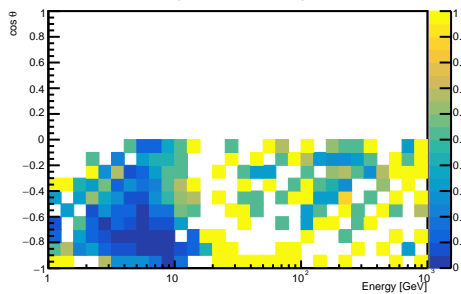
Energy distribution before last cut: jannik\_cut1



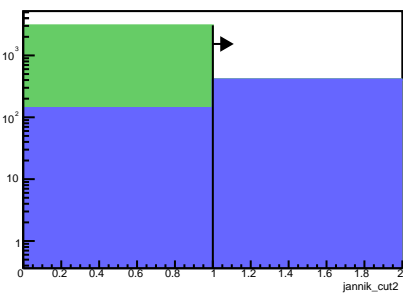
[MC] Acceptance of last cut: jannik\_cut2



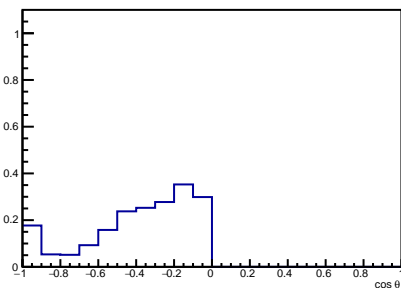
[Data] Acceptance of last cut: jannik\_cut2



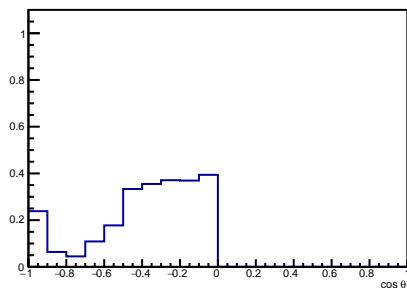
Weighted distribution of cut value after applying all other cuts



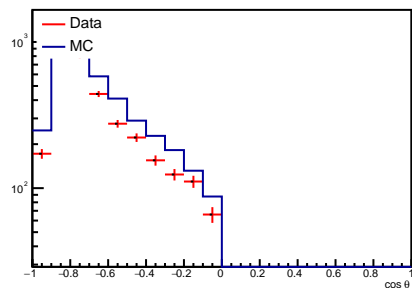
[MC] Angle acceptance of last cut: jannik\_cut2



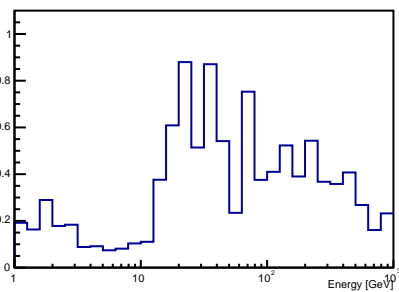
[Data] Angle acceptance of last cut: jannik\_cut2



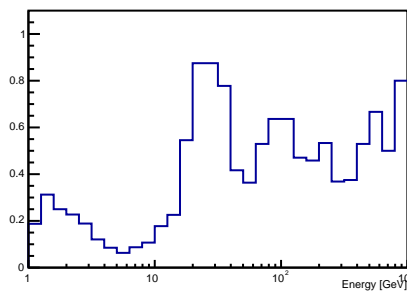
Angle distribution before last cut: jannik\_cut2



[MC] Energy acceptance of last cut: jannik\_cut2



[Data] Energy acceptance of last cut: jannik\_cut2



Energy distribution before last cut: jannik\_cut2

