

dunetpc - Bug #21171

MCC11 MARLEY summed charge discrepancies

10/17/2018 07:00 AM - Erin Conley

Status:	New	Start date:	10/17/2018
Priority:	Normal	Due date:	
Assignee:		% Done:	0%
Category:		Estimated time:	0.00 hour
Target version:			
Description			
<p>Inconsistent summed charge distributions in MCC11 MARLEY (clean) sample; SAM definition mcc11_snb_monoenergetic_marley_clean. The low-energy portion of the simulations (approximately 4-20 MeV) produce charge distributions with negative charge and "double bumps". The higher-energy simulations (20-100 MeV) contain negligible effects, or the effects are completely absent. Further exploration showed inconsistencies in the average summed charge between files of the same simulation, i.e., files with the same configuration parameters produce different summed charge distributions; more information is available in the #low-energy-reco Slack channel or see the attached PDFs.</p> <p>The summed charge was found using RawDigit objects on the collection plane; code on feature branch "feature/econley_ChargeDist". MARLEY/G4 parameters of interest have been shown to be consistent and comparable between MCC11 MARLEY files with the same configuration parameters; some RawDigit/detsim parameters of interest show differences between the files. This indicates that there might be a detsim issue, perhaps a randomly generated parameter that would affect simulations on the ~MeV scale more significantly than the ~10s of MeV.</p>			

History

#1 - 10/17/2018 11:52 AM - Erin Conley

- File SimIDEPlots_MCC11MARLEY.pdf added

Files

File Name	Size	Date	Author
MCC11_MARLEY_RawDigitPlots.pdf	565 KB	10/17/2018	Erin Conley
MCC11MARLEYChargeIssues.pdf	725 KB	10/17/2018	Erin Conley
SimIDEPlots_MCC11MARLEY.pdf	155 KB	10/17/2018	Erin Conley