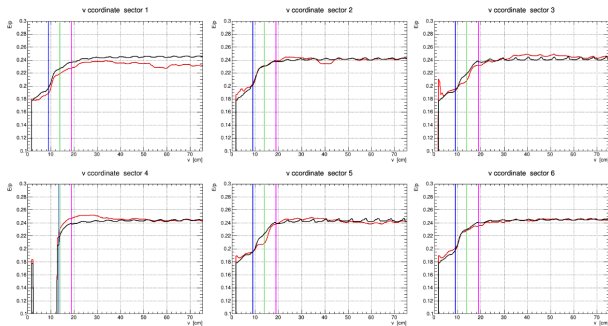


① List of tasks.

PCAL fiducial cuts	DC fiducial cuts
Exclude FTOF panel 2	v_z
Sampling fraction cut	Calorimeter diagonal cut
Minimum Momentum	Δv_z for ep events
χ^2_{pid}	Neutron fiducial cut
momentum corrections	electron energy loss correction
electron β correction	e, n, p momentum corrections

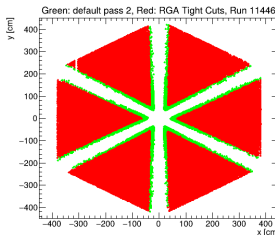
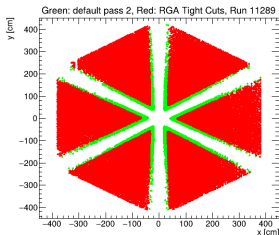
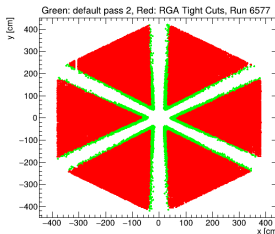
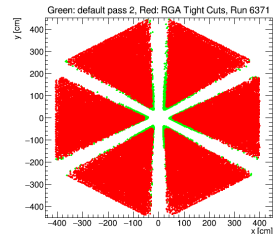
② Use draft of RG-A analysis note for guidance (Tim Hayward, contact author).

Determined by distribution of sampling fraction (E/p) versus the calorimeter coordinates (v, w).



Plots show sampling fraction vs local variable lv for electrons detected in the PCAL during RGA S19 for each sector of CLAS12.*

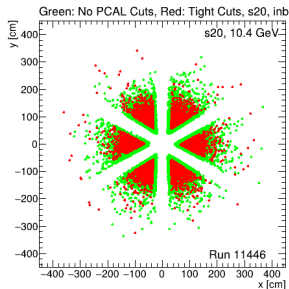
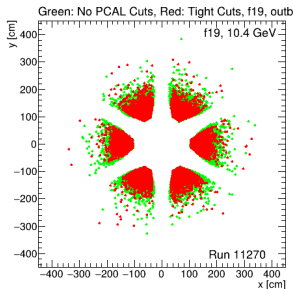
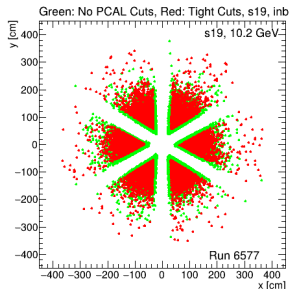
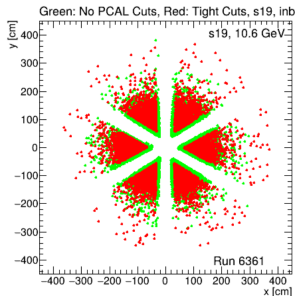
*Results from *RGA_Pass_2_Analysis_Overview_and_Procedures-4.pdf*.



PCAL cut	lv, lw
tight	18.0 cm
medium	13.5 cm
loose	9.0 cm

Plots from standalone test code on four sets of running conditions. Shown at the recent Collaboration meeting.

*Parameters from *RGA_Pass_2_Analysis_Overview_and_Procedures-4.pdf*.



Backup Slides

Running Conditions

Exp. Detail	In-bending	Out-bending	In-bending
Run Period	Spring 2019	Fall 2019	Spring 2020
Run Range	6156 - 6603	11093 - 11300	11323 - 11571
Number of runs	117 runs 106 runs	97 runs	171 runs
Beam	10.6 GeV 10.2 GeV	10.4 GeV	10.4 GeV
Target	Unpolarized LD2	Unpolarized LD2	Unpolarized LD2
Current	35-50 nA	40 nA	35-50 nA
Torus Field	-1	+1/+1.008	-1
Solenoid Field	-1	-1	-1

RGB run period conditions.

Initial Cuts on Lamya's Plots

electron	proton	neutron
pid = 11 v_z vertex position $N_{ph} > 2$ PCAL fiducial V, W > 14 cm cut DC fiducial cut for 3 DC regions SF vs. $P_{ele} \pm 3.5\sigma$ Diagonal cut chi2pid $ \chi^2 < 3$ cut Minimum PCAL $E_{dep} > 60$ MeV	Positive charge particle hit calorimeter	Neutral charge particle hit calorimeter

Run period	E_e	$R_s(tight)$	$R_s(med)$	$R_s(loose)$	Torus	Run Group
S19	10.2	0.84	0.88	0.89	Inb	RGB
F19	10.4	0.70	0.78	0.86	Outb	RGB
S20	10.4	0.88	0.91	0.95	Inb	RGB
S19	10.6	0.75	0.81	0.88	Inb	RGB
S19	10.6	0.51	0.65	0.82	Inb	RGa