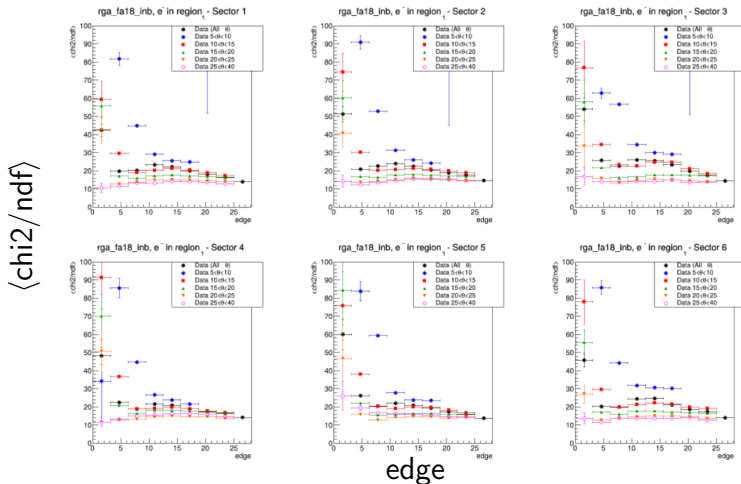


Cut is determined by the *edge* parameter in the REC::Traj bank. This variable is a signed quantity defining the distance in cm to the closest edge of the detector. The cut value is determined where the $\langle \chi^2/\nu \rangle$ of tracks stabilizes. Results below are from a draft of the RG-A Pass 2 Analysis Note and the Iguana documentation.

Inbending Tracks	
Region 1	If $\theta < 10^\circ$, <i>edge</i> > 10 cm, else <i>edge</i> > 3 cm
Region 2	If $\theta < 10^\circ$, <i>edge</i> > 3 cm, else <i>edge</i> > 3 cm
Region 3	<i>edge</i> > 10 cm

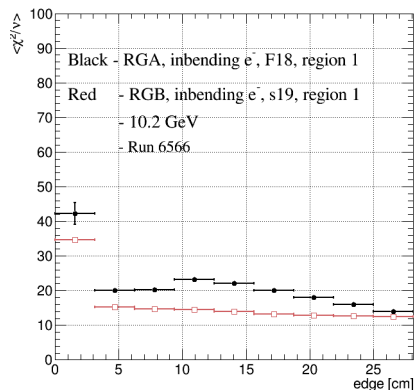
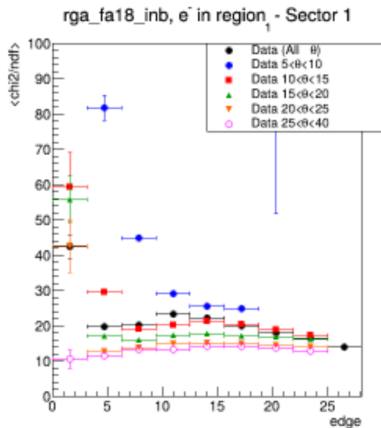
Outbending Tracks	
Region 1	<i>edge</i> > 3 cm
Region 2	<i>edge</i> > 3 cm
Region 3	<i>edge</i> > 10 cm

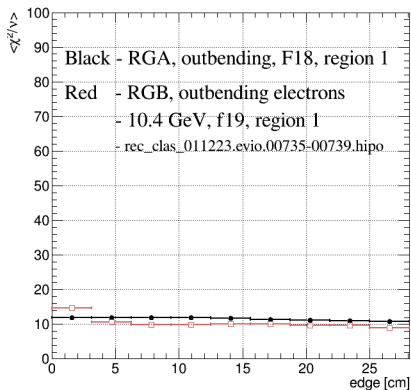
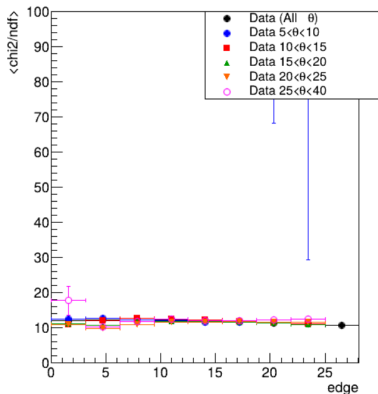
Angle cuts determined by stability of $\langle\chi^2/\nu\rangle$ in each sector.^{1,2}



1 - RGA_Pass_2_Analysis_Overview_and_Procedures.pdf, S. Alvarado *et al.*

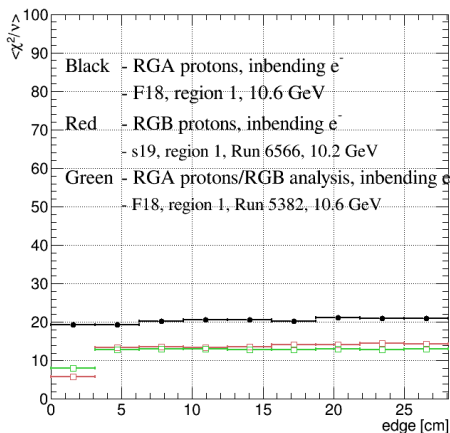
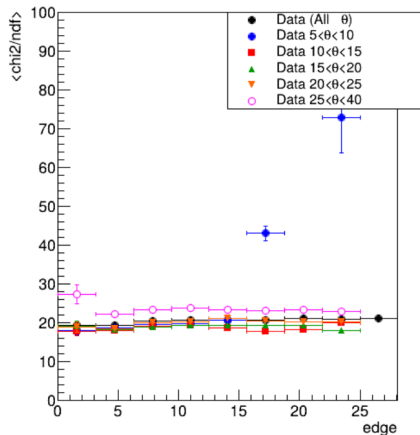
2 - RGA Fiducial Cuts, R.Capobianco *et al.*



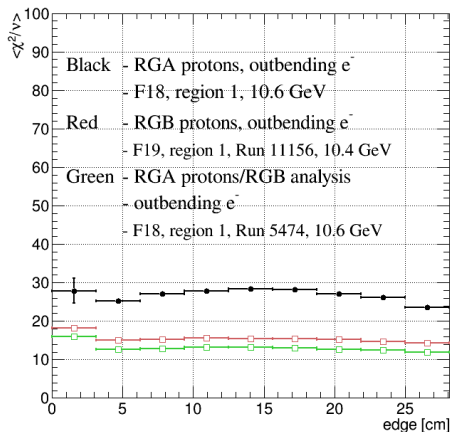
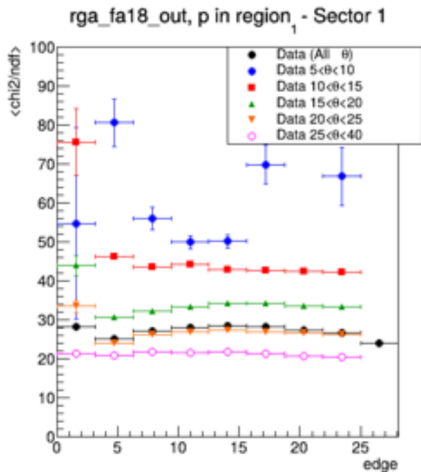
rga_fa18_out, e⁻ in region₁ - Sector 1

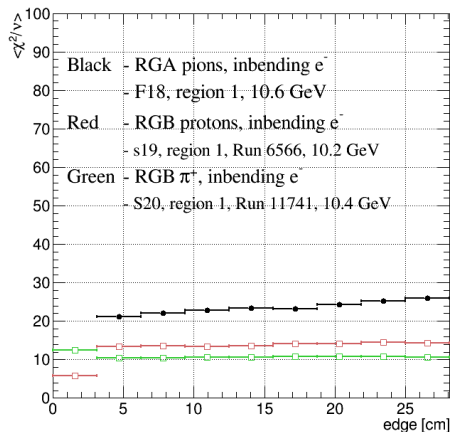
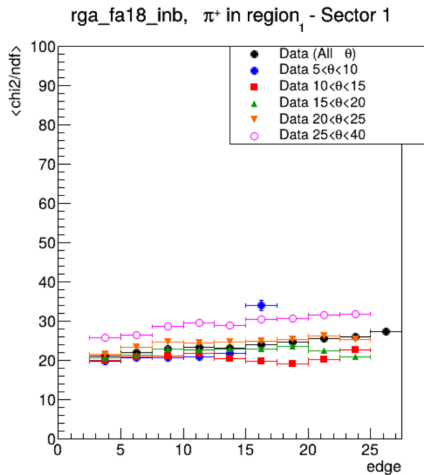
DC $\langle \chi^2/\nu \rangle$ results - RGB protons (inbending electrons) 5

rga_fa18_inb, p in region₁ - Sector 1

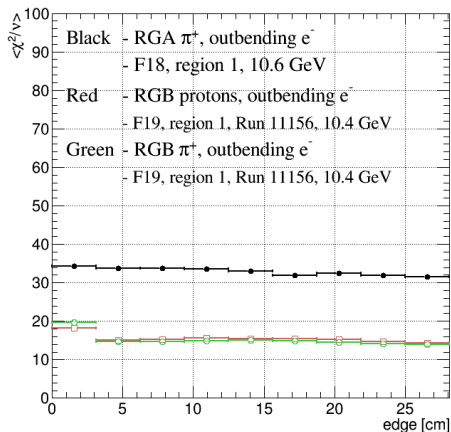
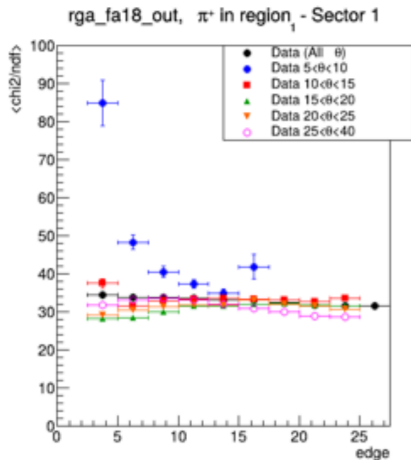


DC $\langle \chi^2/\nu \rangle$ results - RGB protons (outbending electrons) 6





DC $\langle \chi^2/\nu \rangle$ results - RGB π^+ (outbending electrons) 8



- 1 Studied the CLAS12 Forward Detector tracking use the dependence of the average reduced chi-square for the track $\langle \chi^2/\nu \rangle$ versus the 'edge' parameter. The edge parameter is the signed distance from the hit on the track position and the closest detector edge.
- 2 Compared tracking results, $\langle \chi^2/\nu \rangle$ versus edge, for Run Group A and Run Group B focusing on electron, proton, and positive pions in the final state relevant to the G_M^n analysis. Results shown are for the CLAS12 R1 drift chambers.
- 3 Very good agreement between the two Run Groups for outbending electrons.
- 4 All other comparisons (inbending electrons, p/π^+ for inbending/outbending electrons) show a lower average reduced chi-square for Run Group B by a factor of $\approx 1.5 - 2$.