

Overview of the PrimEx II run

E beam = 10.1 GeV , 10^{-4} Amorphous radiator, 200 nA beam current, 750 um PS converter

Expected run length: 53 days (Sept 13 – Nov 5)

Efficiency: 42 % (up to now), long breaks in accelerator performance

Triggers: CCAL & FCAL, FCAL, CCAL, PS (the same as in 2019)

Run specifics:

- Take data with and without magnetic files (70% data with the field On)

- empty target BG is not reduced by much, but some 'improvements' when the field is On
- Compton can be reconstructed with the field On

- Increase the fraction of empty target data (more than 40% of the total PS triggers)

Overview of the PrimEx II Run

- Most of scheduled activities were according to the run plan:

https://halldweb.jlab.org/wiki/index.php/Eta_Decay_Width_Measurements_via_Primakoff_Effect

- No major issues with the detector. As expected took time to check/tune sub-detectors after long break in operation
 - relatively large bleed through from the accelerator

Major activities:

Beam restoration, calibration of tagging sub-detectors, snake scan for CCAL calibration, trigger tuning, FCAL HV adjustment and calibration, TAC run, FDC/CDC straight track runs, CDC HV scan, production runs

Status of PrimEx II Production Run

Summary 2019 / 2021

Conditions	He				Be			
	Target		Empty		Target		Empty	
	2019	2021	2019	2021	2019	2021	2019	2021
200 nA	39991	2045	3288	250	2789	2550	643	236
		2527						
100 nA	549	665		60		695		74
50 nA	430					622		47
Solenoid								
200 nA		2616		1494				
200 nA		1329		1594				
200 nA		3096						
200 nA		1990						
Total	40970	14268	3288	3398	2789	3867	643	357

expected to collect ~18 B triggers on He

Number of PS triggers in production runs:

PrimEx I (2019, E = 11.2 GeV) - 12.9 B triggers

PrimEx II (2021, E = 10.1 GeV) - 8.0 B triggers (large fraction of data with the magnet on, larger fraction of data on empty target, ~45 %)