PRad RC Report

(Week of June 8 - 14)

Highlights & Book keeping:

Wed - Thur (06/08-06/09): production on H_2 continued with 10 nA beam

Friday (06/10): DAQ issues are resolved, production with15 nA current. trigger rate ~ 5kHz, data rate ~400 MB/sec and 87% live-time.

Most weekdays beam was restored within 2-4 hours after closing the Hall.

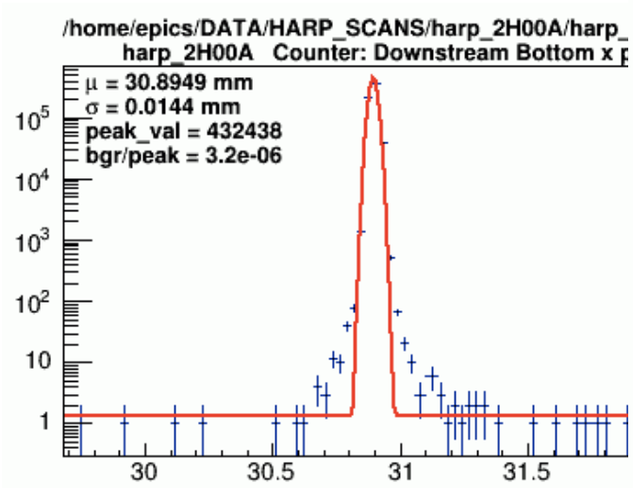
Sunday (06/12): Reached production goal for 1.1 GeV beam on H_2 (over 600M events collected, about 25-30% are background. Also collected over 55M events with empty target.). A reference measurement on a 1um thin Carbon target completed Sunday night.

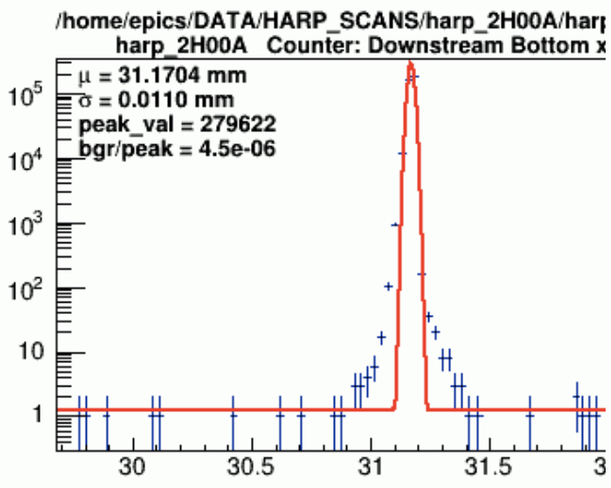
Switched to 2 pass beam on Monday (June 13), first beam on target at ~05:00 AM today morning (1 hr of production @ 15 nA).

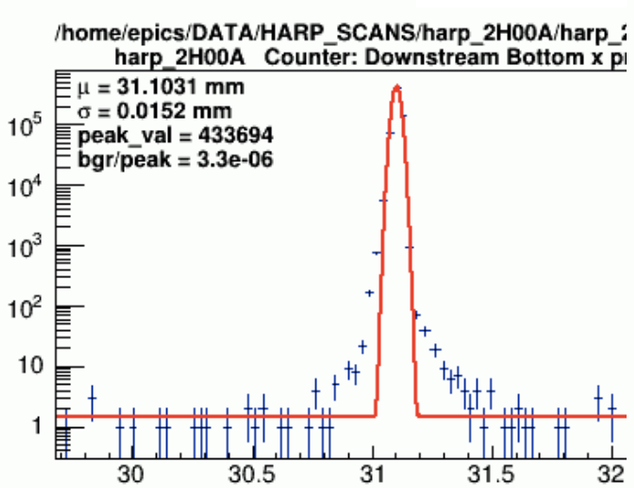
2/3 of approved PAC days used up so far.

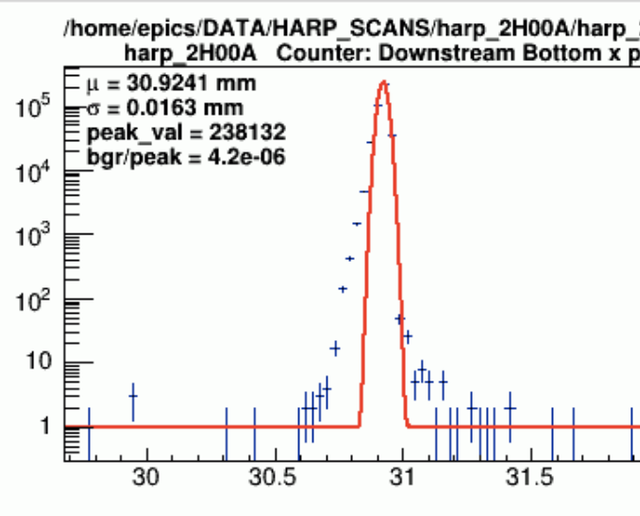
50% production and 100% of calibration data (2/3 overall) collected to date.

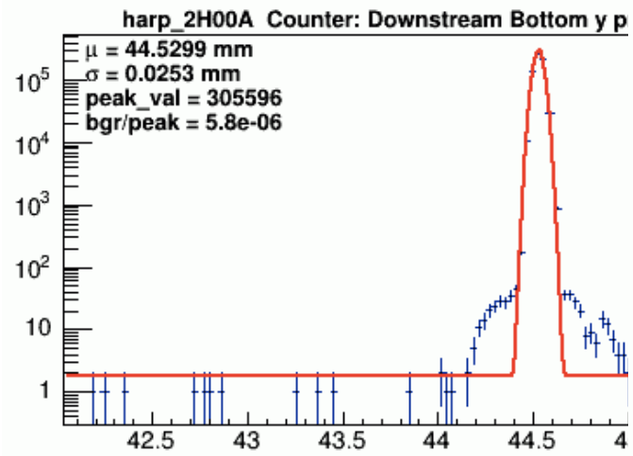
Quick and precise restoration of 1 pass beam

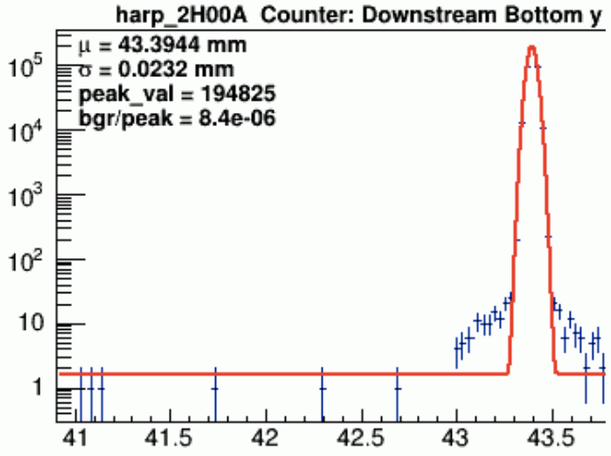


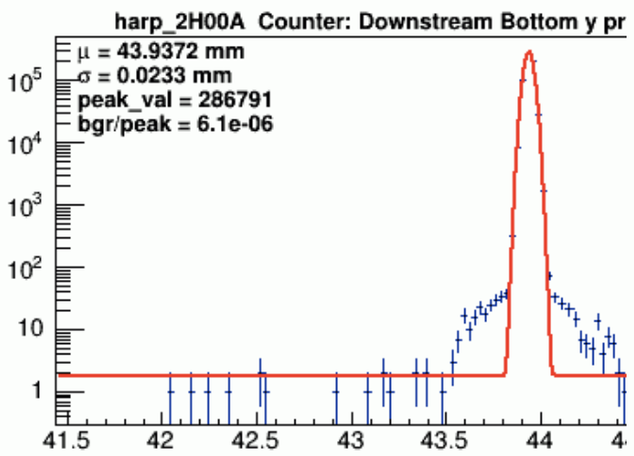


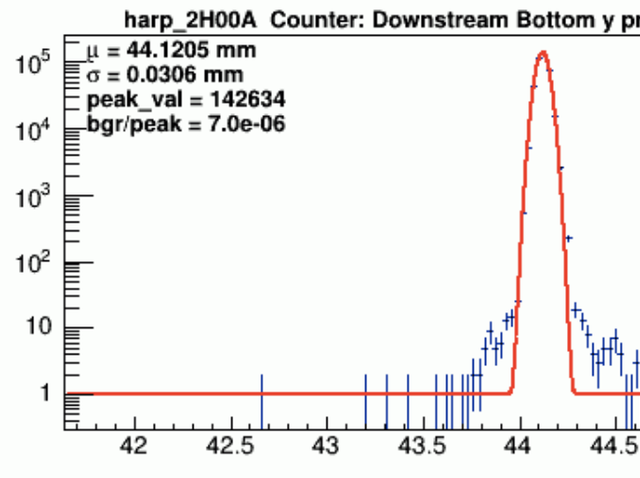


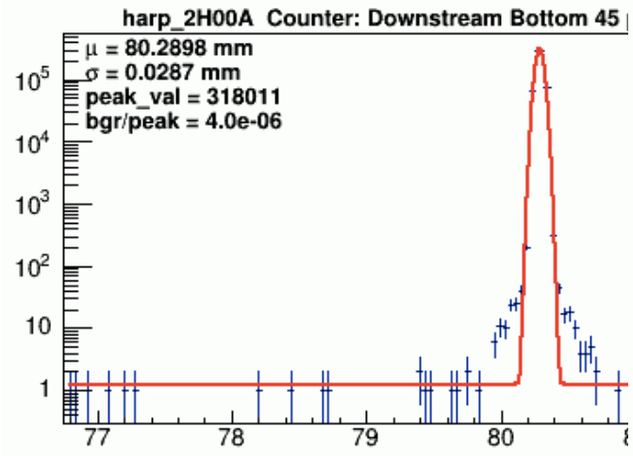


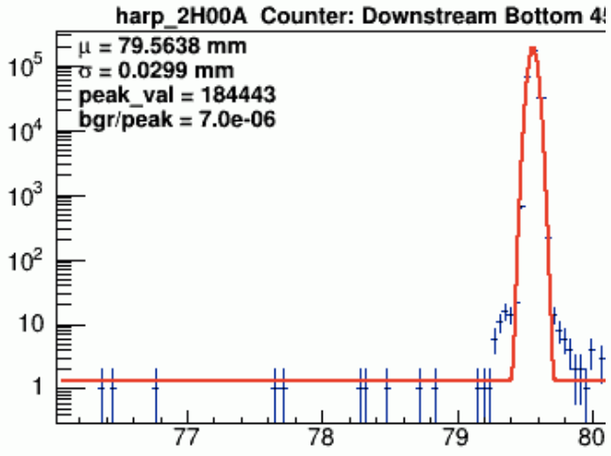


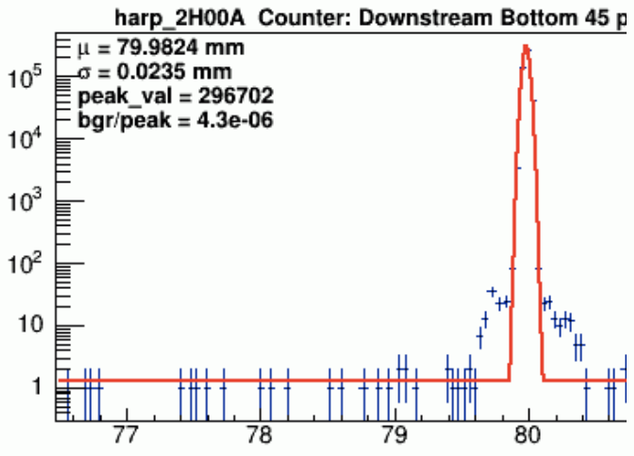


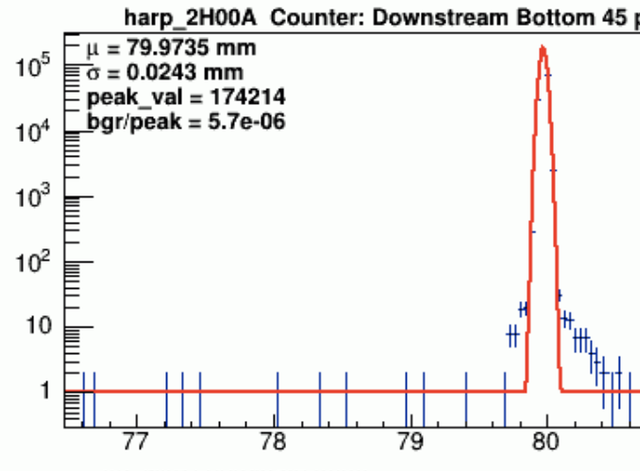






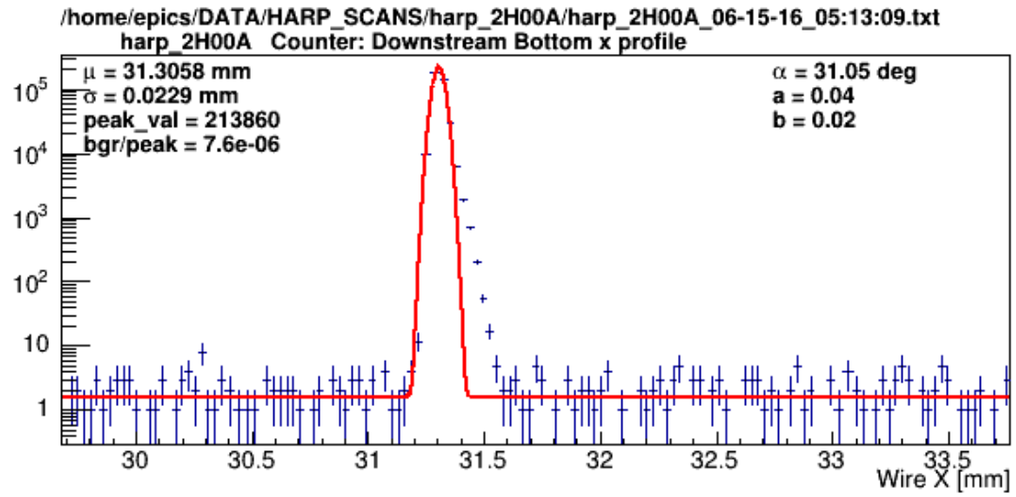


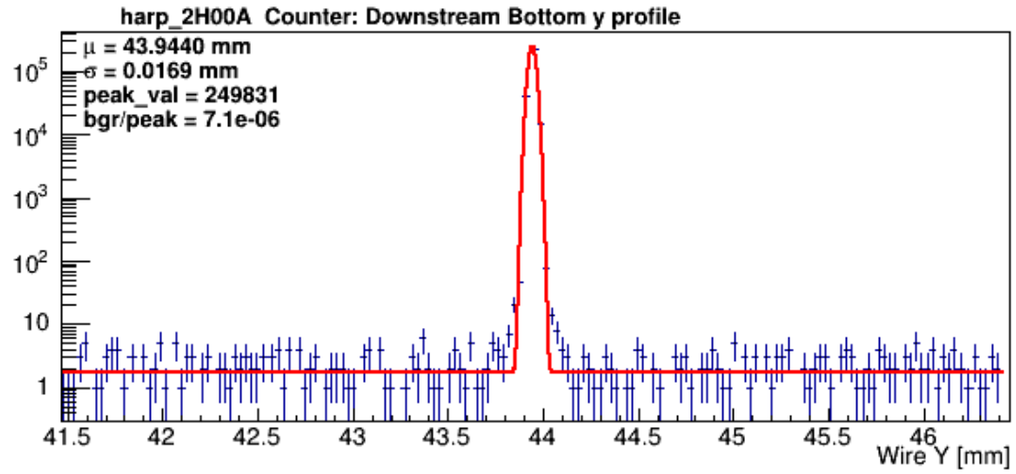


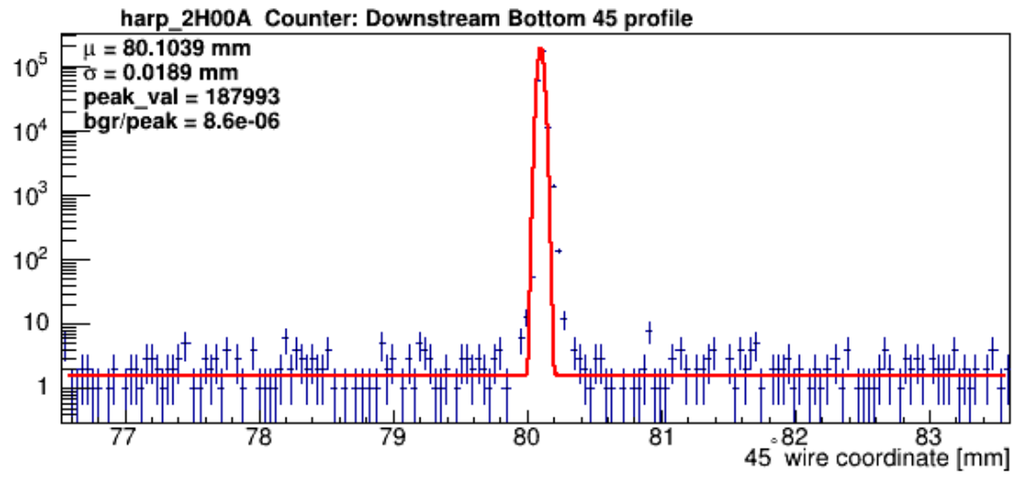


Tuesday **Wednesday** **Thursday** **Friday**

2 - pass beam from today morning

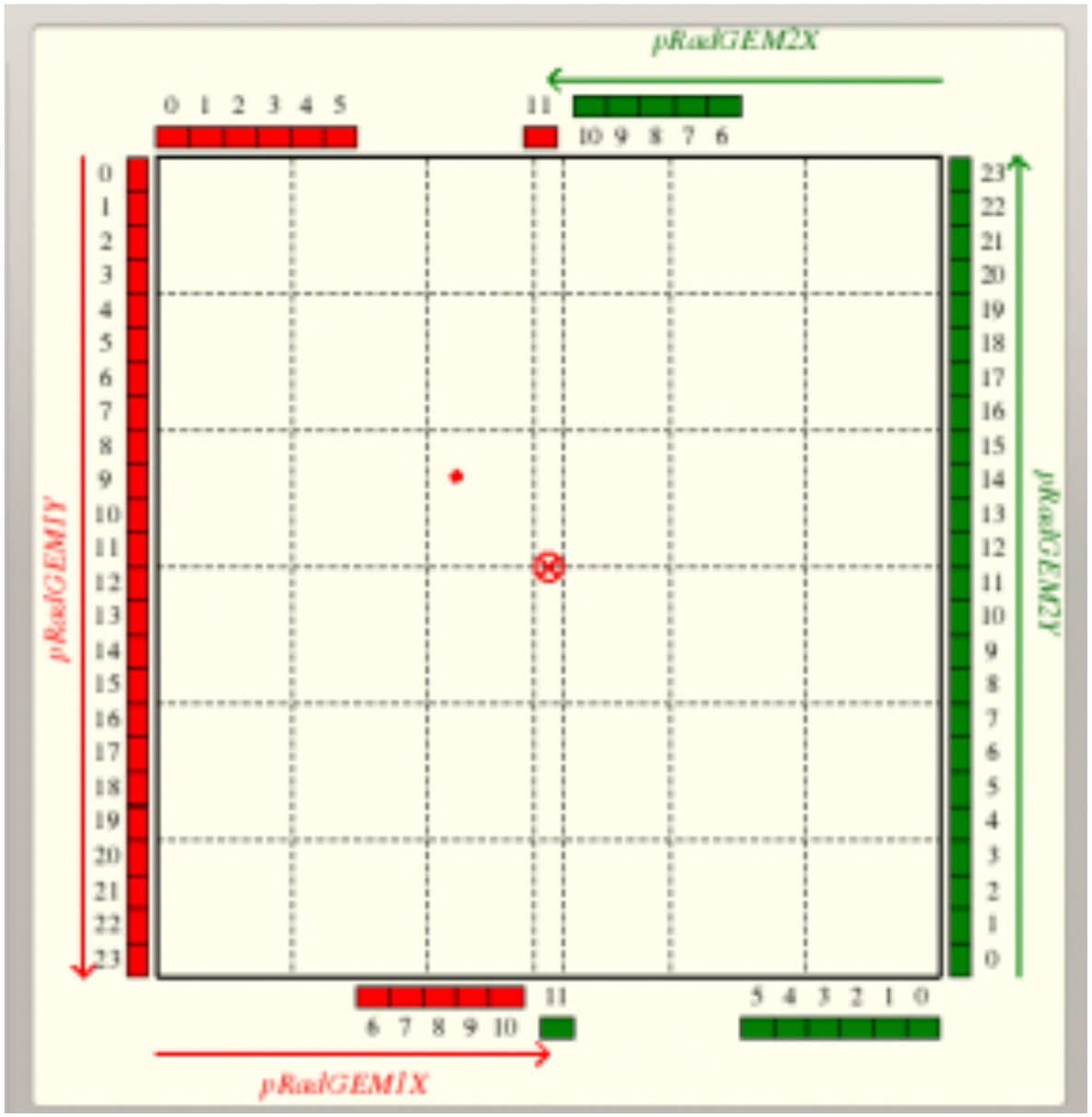




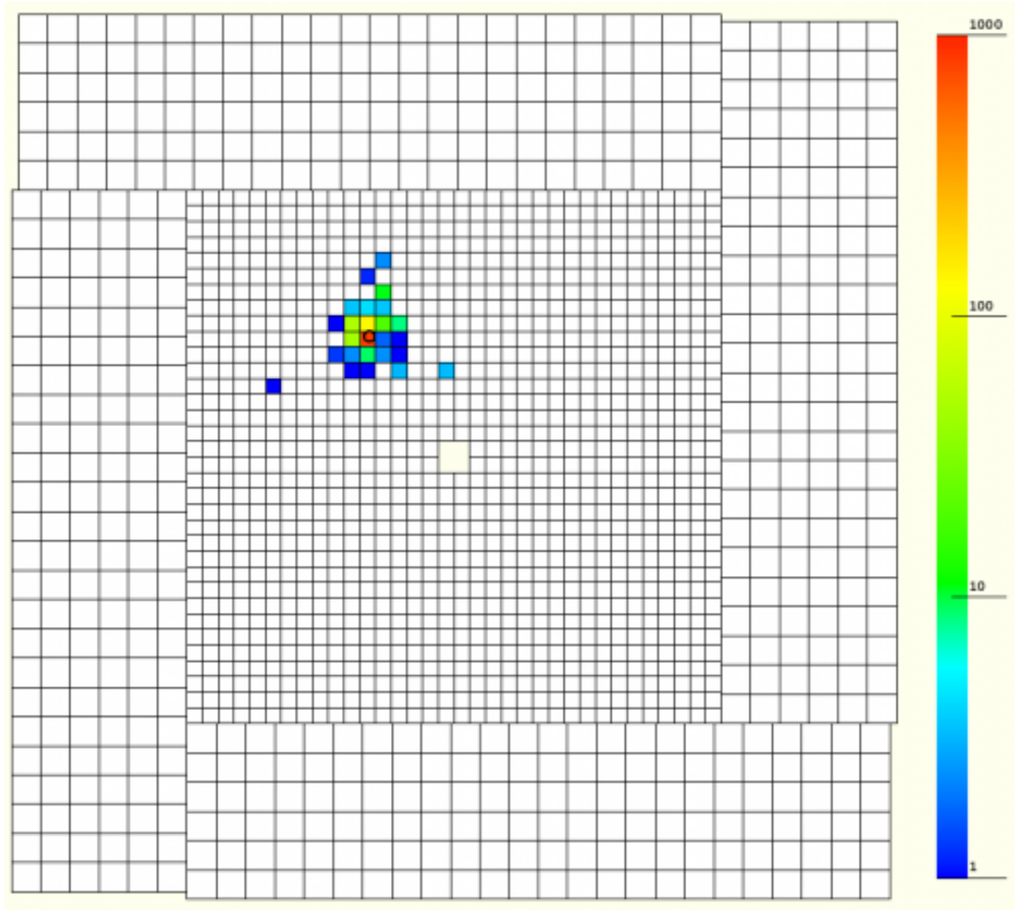


Online matching between GEM and HyCal hits

GEM



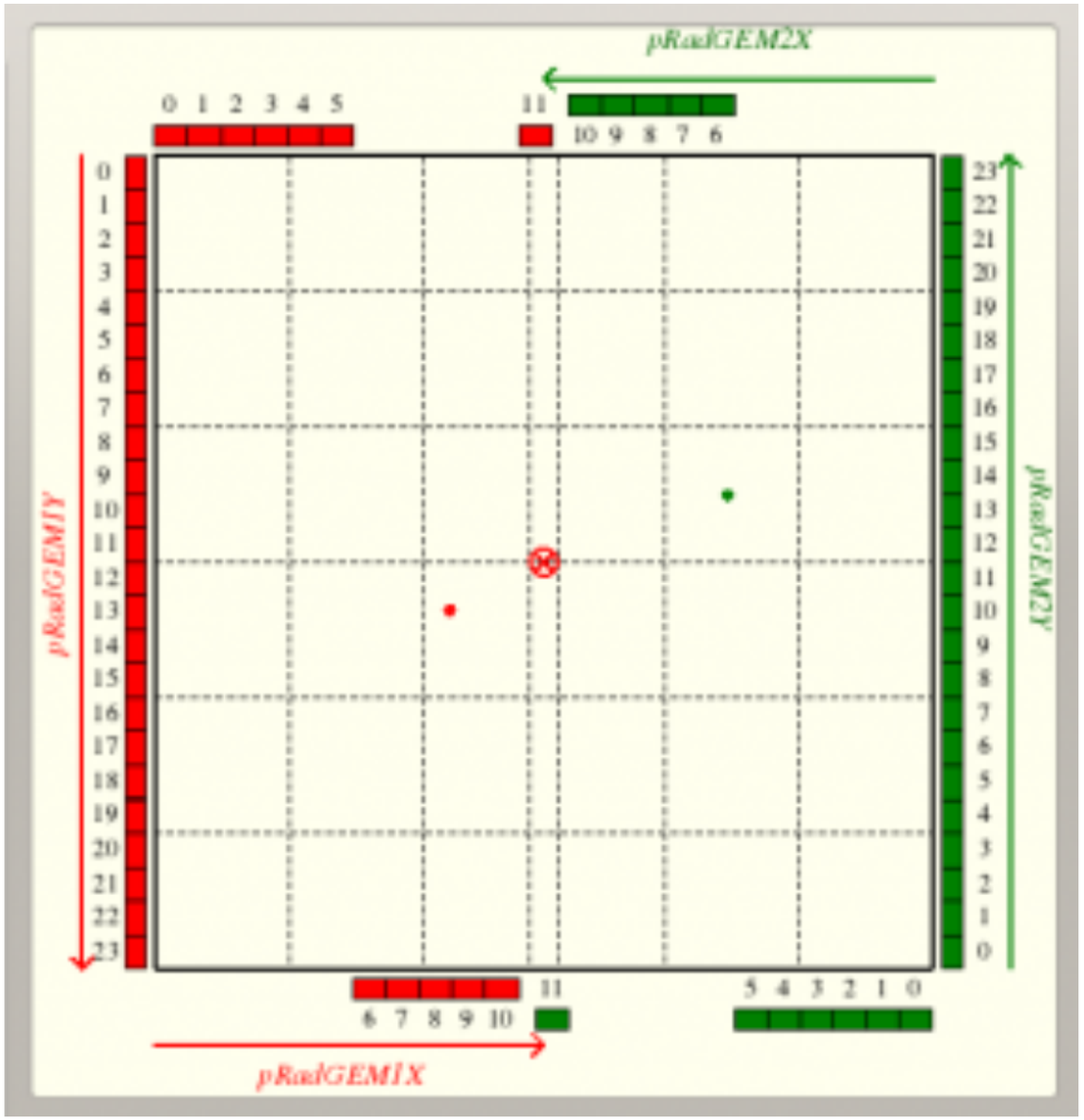
HyCal



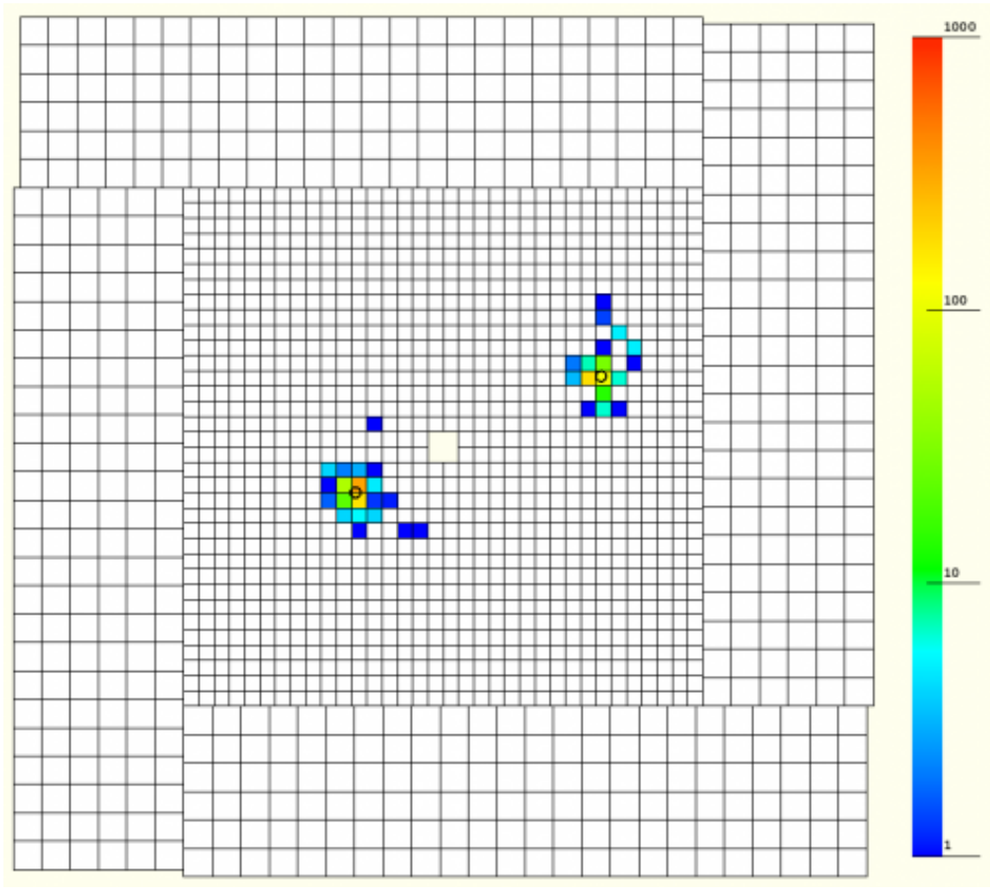
An e-p elastic scattering event

Online matching between GEM and HyCal hits

GEM

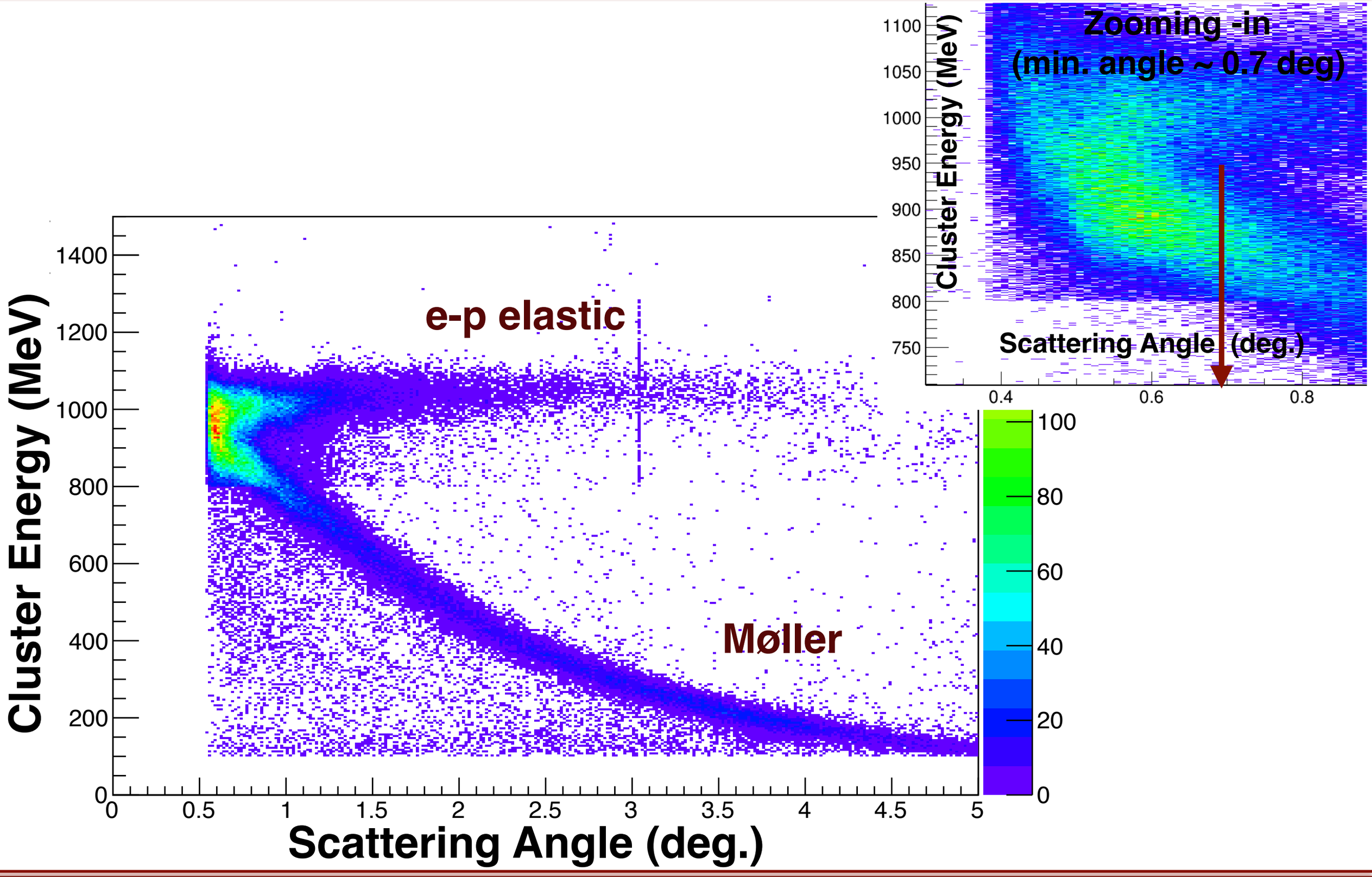


HyCal

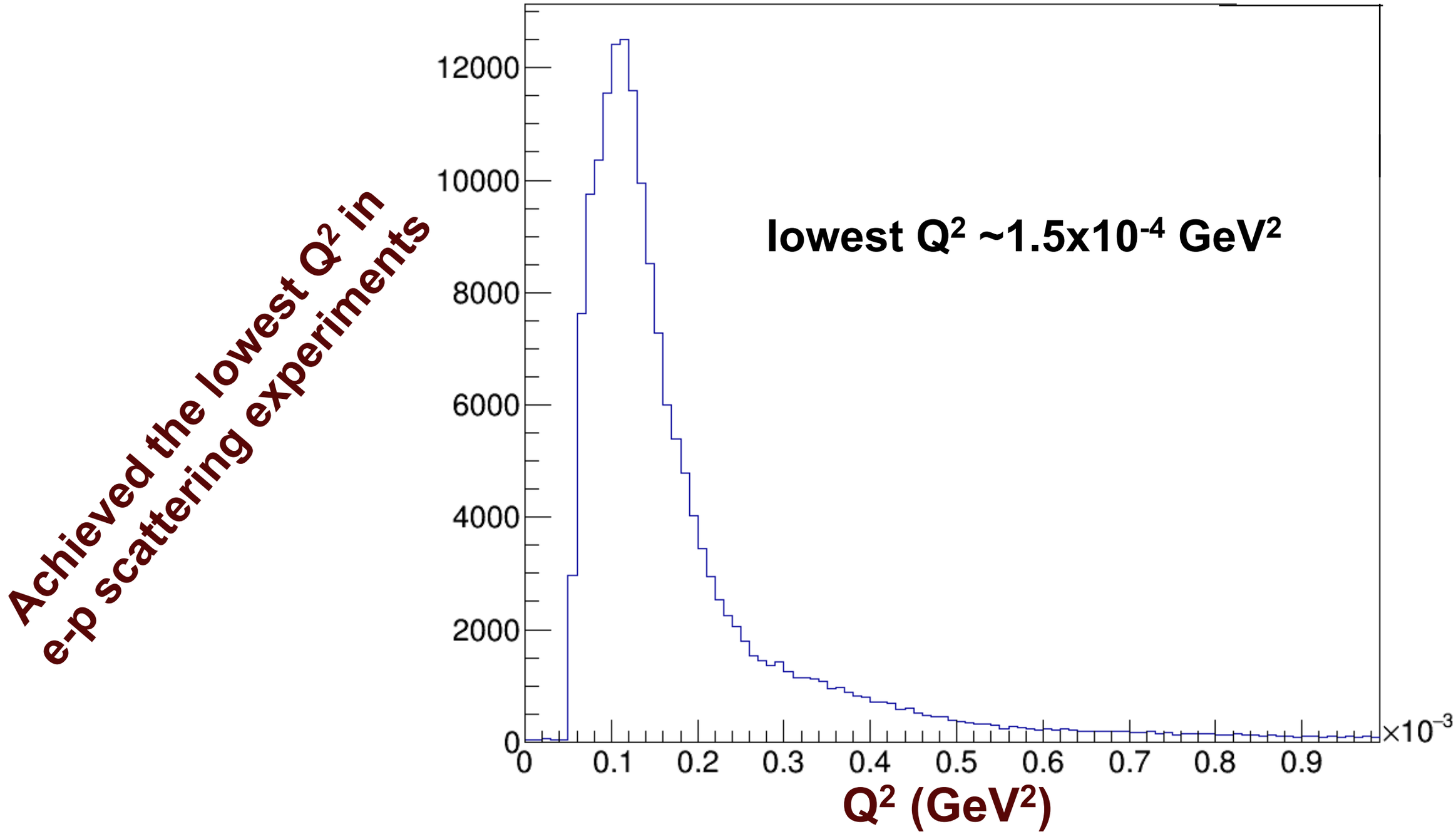


A Møller scattering event

Energy vs scattering angle with preliminary calibration



Q^2 distribution of single cluster events



Preliminary matching of GEM hits with HyCal clusters ($PbWO_4$ only)
Total energy of cluster > 700 MeV

Plans for this week

Collect 2.2 GeV data to extend the range of Q^2
The full Q^2 range is essential for robust extraction of proton charge radius (i.e. 2.2 GeV data just as important as the 1.1 GeV data)

Need total of 96 hrs (4 days) of running to get the full statistics (including the empty target running)**.**

An extended weekend running is the only way we can get full statistics for 2-pass running.