

Glast at SPS?

GLAST is a “recognized experiment” at CERN (status is reconsidered every 3 years, valid until 2007).

Running period: May 5 - November 5 2006

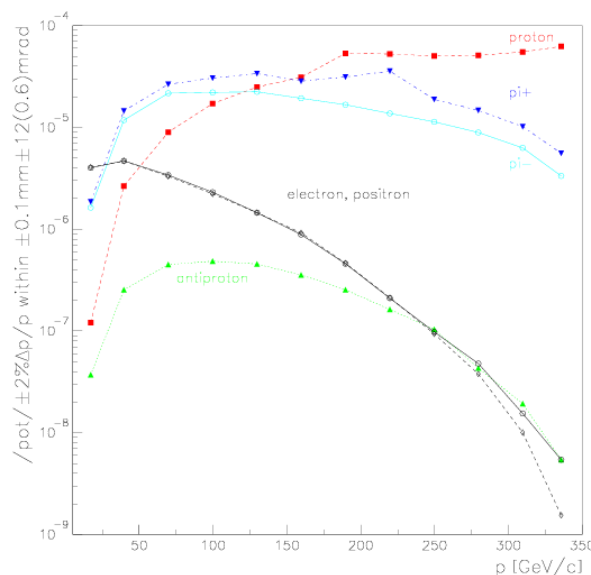
Deadline for proposal submission: October 15, 2005 (to be checked)

SPS North Area: 3 general-purpose beam lines, H2-H4-H6

Primary beam: 450 GeV protons, intensity up to 10^{12} p/s

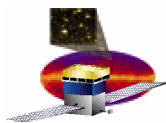
Master cycle: 14 s, spill duration 2-4 s

Production at target
(part./proton)



All beam lines provide

- pions
- electrons
- muons



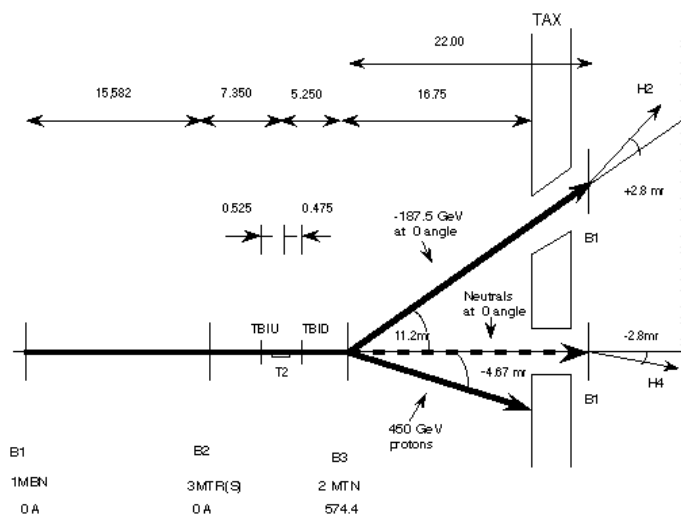
H4 (GLAST run in June 2002)

Maximum energy: 300 GeV/c e^- (“0 degree wobbling mode”)

Minimum energy: 8 GeV/c

Flux: a few hundred Hz at 280 GeV/c, greater at lower energy: $10^6 e^\pm$ at 150 GeV/c
($9 \cdot 10^7 \pi^+$, $3 \cdot 10^7 \pi^-$ at 200 GeV/c)

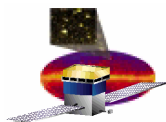
Little contamination (a few % level)



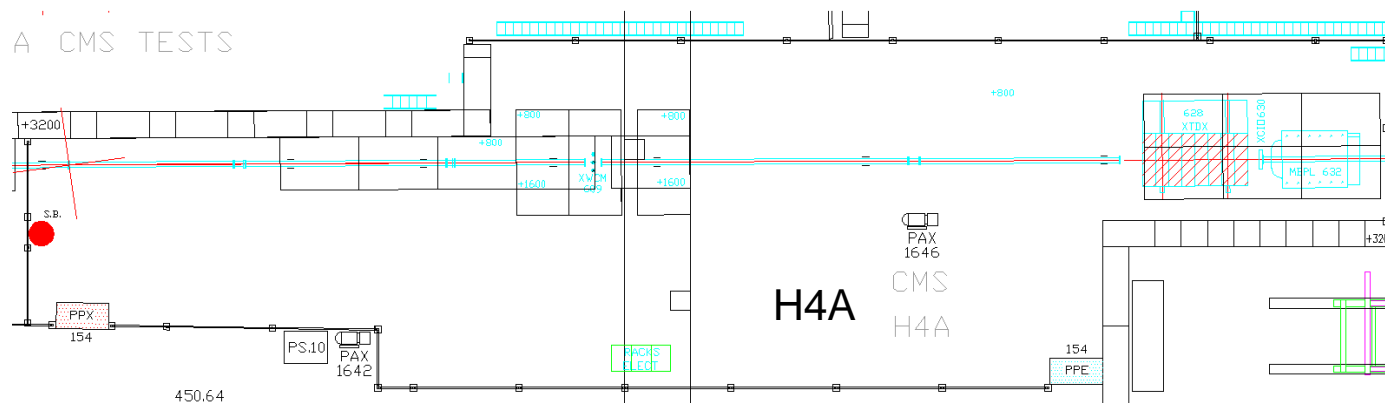
0 degree wobbling mode
protons \rightarrow neutral pions \rightarrow gamma rays \rightarrow electrons

Momentum bite: defined by slits (3 mm corresponds to $\Delta p/p=1\%$)

Lateral extension: ~ 1 cm + possible tails

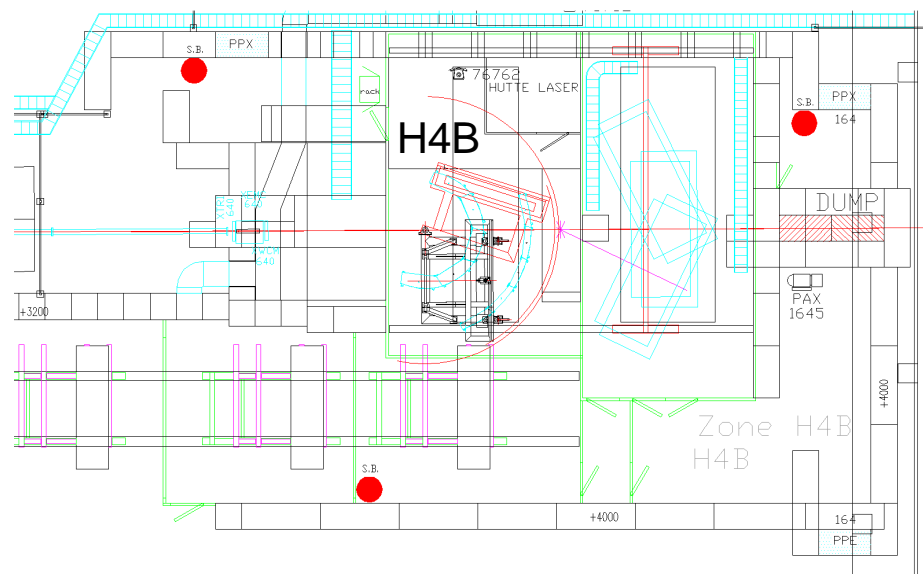


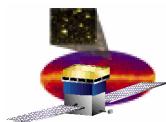
H4 (GLAST run in June 2002)



H4A: CMS room, nice & clean

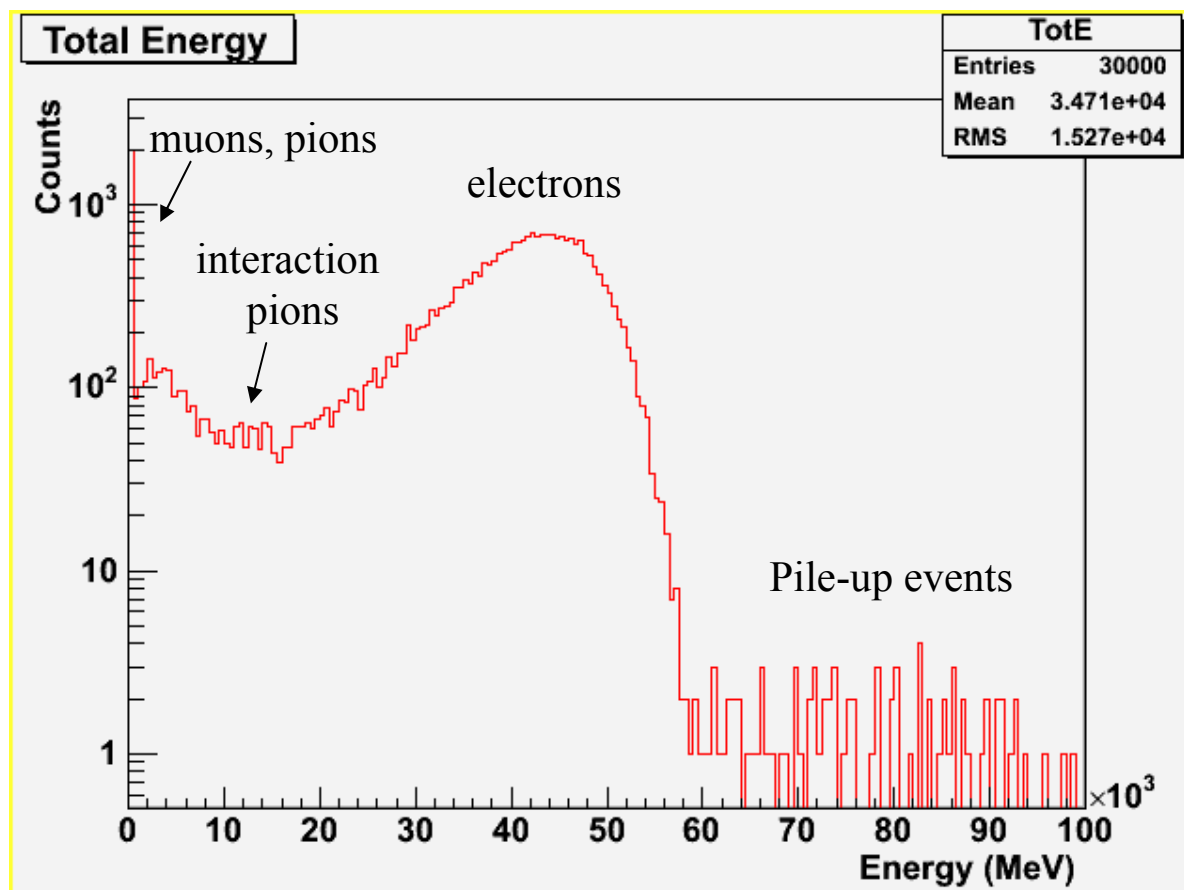
H4B: standard area
big moving table



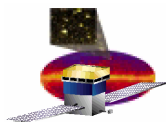


H6 (GLAST run in August 2003)

80 GeV electrons (secondary)



For tertiary beams ($E < 50$ GeV), only mixed beams are available:
Similar number of pions and electrons.



Generalities

Beam diagnostics

Beam profiles can be observed from MWPCs placed along the line, that can be taken in and out. The beam particles can be counted by “Trigger” (plastic scintillator) detectors. Possibility to have Threshold-Cerenkov counters in the beam (the pressure has to be adjusted by the user). These detectors are triggered by some of the trigger detectors. Useful for $E < 15$ GeV.

Setting up

The beam is generally granted for a given number of weeks (6 days ON +1 day OFF for maintenance). Depending on the schedule, the setup time may be taken from our allocated beam time, if it exceeds one day.

Additional costs

What is free: beam, electricity, CERN computer accounts

What is not: most the rest, including phone, access to electronic pool, other fluids (water)...

Proposal to be submitted

We don't need to provide fine details on what we plan to do. Meeting the October 15 deadline should not be a problem. However, the time request has to be properly estimated.