

Lumi GEM Performance during First Data Taking

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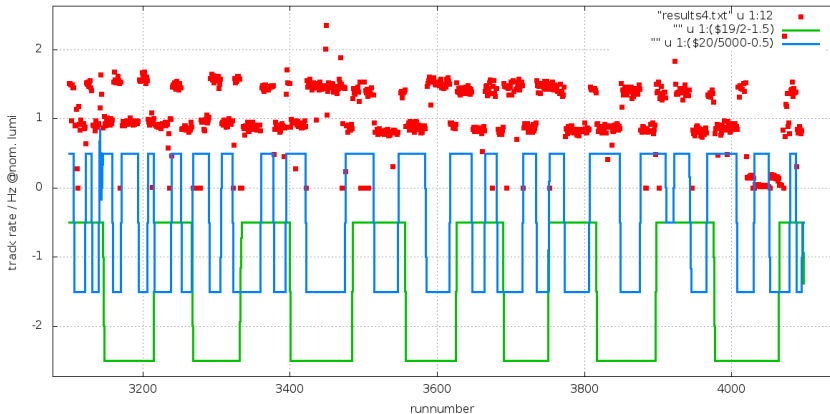
Hampton University

12. April 2012

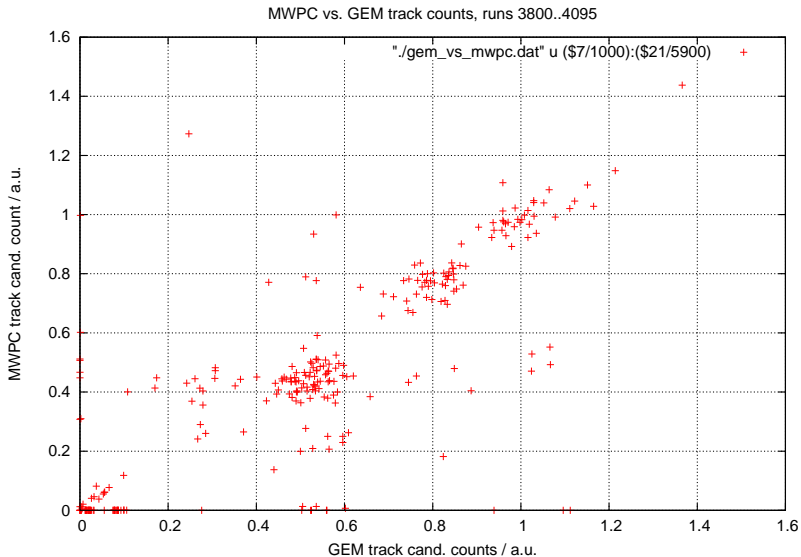
OLYMPUS Collaboration Meeting – April 2012

Straight Track Rates

track cand. rate, beam species, field polarity



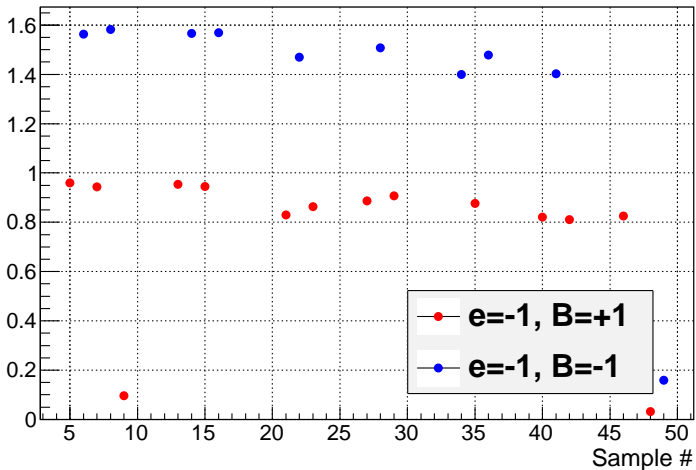
MWPC vs. GEM Track Candidate Rates



Straight Track Rate Ratios

Electrons, B + / -

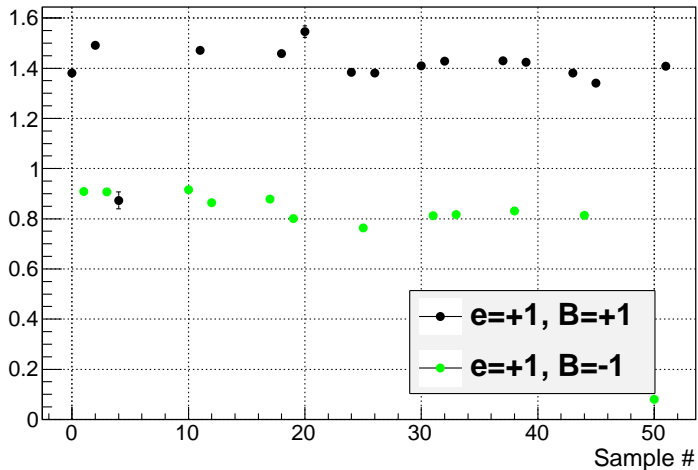
12 degree LumiGEM rates @ nominal Lumi / a.u.



Straight Track Rate Ratios

Positrons, B + / -

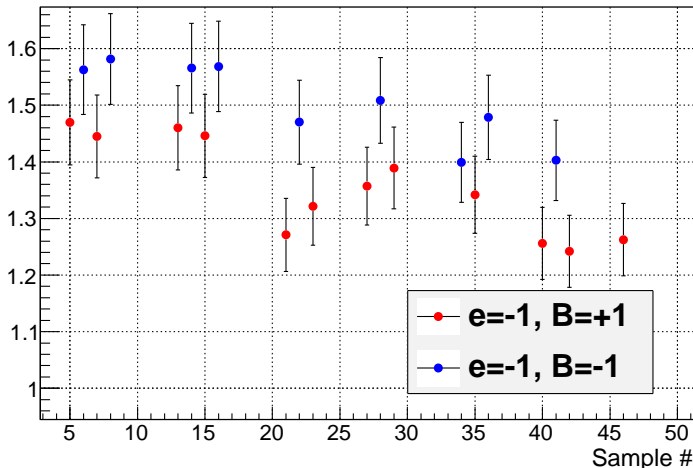
12 degree LumiGEM rates @ nominal Lumi / a.u.



Straight Track Rate Ratios (corr.)

Electrons, B + / -, acceptance correction from MC (A.K., $\pm 5\%$)

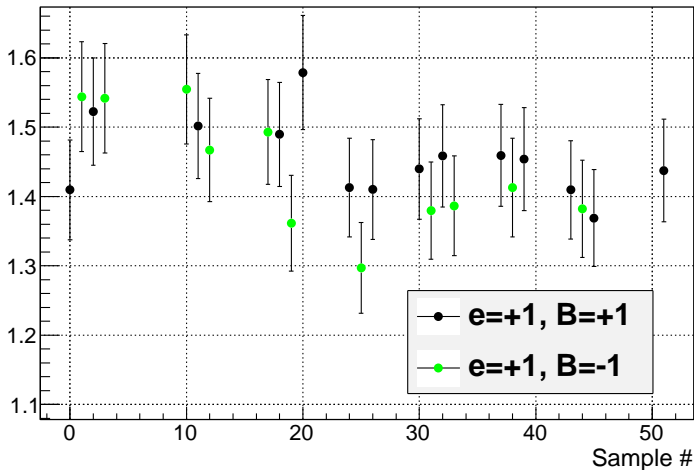
12 degree LumiGEM rates @ nominal Lumi / a.u.



Straight Track Rate Ratios (corr.)

Positrons, B + / -, acceptance correction from MC (A.K., $\pm 5\%$)

12 degree LumiGEM rates @ nominal Lumi / a.u.



- MWPC vs. GEM track rate shows offset
 - check empty target runs
 - check in combined analysis
- Rate drop from run 3401 on...
- Ratios with acceptance correction:
 - quite reasonable for e^+
 - a bit off for e^-
 - check with OLYMPUS MC with better statistics
- Missing factor in Luminosity:
 - ~3.5 without “toy tracking”
 - ~10 with “toy tracking” (inefficiencies of 1d/2d matching, tracking)