Status Update
of
PHENIX Shield Study

Electron Measurement Workshop
at
PHENIX Collaboration Meeting
in
Costa Mesa, CA

March 4, 1997

presented by

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Mar.4, 1997
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Introduction & History

Shielding DC support frame
which is a major background source into RICH

Proposal at EWG meeting in June '96 at BNL

Update report in July '96 in Santa Fe, NM :

- **RICH occupancy reduction by ~ 30 %**
  (CFM, KS)
- **no adverse effect on other detectors**
  (CFM)

Update report in November '96 at BNL :

- **RICH e–ID improvement by ~ 50 %**
  (KS)

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Status

'10K' simulation project starting :

- **allows more quantitative study and arguments**
- **though takes time as shield must be in PISA**

So far analyzed :

- **600 central Au+Au HIJING events without shield**
- **300 central Au+Au HIJING events with shield prototype 3**
- **281 central Au+Au HIJING events with shield prototype 1**

- **RICH PMT occupancy**
- **rejection power for pions**
- **efficiency for electrons in full background at 250 MeV, 500 MeV and 1 GeV**

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Summary

Background occupancy in the RICH :
reduced by 30 – 35 % with shield (type 3 or 1)

DC support frame :
no longer a major background electron source
with shield installed

Pion rejection power :
implied to improve by a factor of ~ 2 (?)
keeping the same electron efficiency

Current statistics
(~ 300 events per configuration) :
barely enough too see e–ID improvement
insufficient for quantitative arguments
or discussion on shield designs

More statistics and quantitative arguments :
coming very soon (in weeks)