

Background meeting, Jan. 20th 2011

Full Simulation Cross Checks Planning

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Future Plans (MDI Summary at Caltech)

- **Some differences between Winter and February production. Changes**
 - New Geant4 version 4.9.2 → 4.9.3
 - New Final focus configuration
 - New pipes geometries (near IP and extension up to $\pm 10\text{m}$)
- **Some checks to understand the differences**
 - Run old geometry with new Geant4 version
 - Run new geometry with old Geant4 version

} **To be completed by
end of January 2011**
- **Detector groups will report on this test production findings** } **~2 weeks
February 2011**
- **If we are lucky (reasonable discrepancies among Geant4 versions)**
 - Correct the little bug in pipes geometry
 - Instrument the boundary of Bwd-EMC
 - Optical model of PID
(Cerencov light production and propagation)

} **~2 or 3 weeks**
- **Future production (with new configuration)**
 - 2photon background (500k bunch crossings)
 - Radiative Bhabha (1M bunch crossings)
 - Touschek and beam gas interaction (sample size to be decided)

} **~2 weeks**

Available Samples

- **SuperB_Wolf_shielded, old geometry (2010_full_HP) (Annency 2010)**
 - 104k events
 - $\Delta E/E = 0.05$
 - Old Bruno, Geant4.9.2
- **SuperB_Wolf_v12_sf10, new geometry (2010_full_Winter) (Caltech 2010)**
 - 188k events
 - $\Delta E/E$ scan 0.3 \rightarrow 0.7, mainly at 0.5
 - New Bruno, Geant4.9.3
- **SuperB_Wolf_shielded, old geometry (2011_01_full_xchecks_oldgeo)**
 - 113k events
 - $\Delta E/E = 0.05$
 - New Bruno, Geant4.9.2
- **SuperB_Wolf_v12_sf10, new geometry (2011_01_full_xchecks_newgeo)**
 - 98k events
 - $\Delta E/E = 0.5$
 - New Bruno, Geant4.9.2

Planning and Schedule

- The plan is to compare the following samples:
 - 2010_full_HP vs 2011_01_full_xchecks_oldgeo (compare Bruno versions)
 - 2010_full_Winter vs 2011_01_full_xchecks_newgeo (compare Geant4 versions)

Hypothesis:

if samples are in agreement \Rightarrow 2010_full_HP/2010_full_Winter differences due to new Final Focus

- **Comment from Andrea di Simone:** low frequency photons are present in Geant4.9.2 (only in QGSP_BERT_HP) \Rightarrow **Need to compare the same physics lists**
- Subsystems as requested to provide an schedule for analysing of the before mentioned samples \Rightarrow **Once done call for next meeting**

Backup