SiD Muon System Planning

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Moving Forward to a SiD CDR

- SiD Goals
- Write CDR in FY08/09
- Requires technology selection in early FY08
- What do we need to be ready to decide?
- We've started Generic muon system design to specify # of layers, resolution, usefulness of tailcatcher

Generic Designs

- Only muon identification studies to date are by C. Milstene who showed that a muon system would increase the purity of the muon sample from 69% to 94% in 500 GeV bb jets.
  - Do we have a physics process where this improvement is critical?
- I reported on how the flux return weight and cost vary with the number of layers and gap size.

Technology Criteria

- Cost, Reliability, Performance
- Personal take-
  - RPCs - Cheaper
  - Scintillator - More Reliable
  - Performance - Both good enough
- Will generic studies favor one technology over the other?

Plans

- Need to develop both the generic requirements as well as specific technology cost model.
- Costs should include all aspects
  - Bare detector
  - Front end electronics
  - Cabling/Gas lines/HV
  - Higher Level DAQ electronics
  - Spares
  - Maintenance & operating costs
- When?