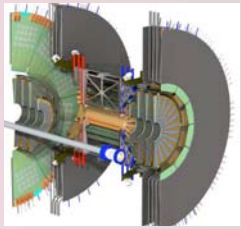
FVTX Review



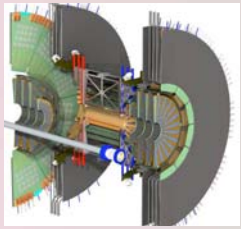
Primarily physics/feasibility review:

BNL Overview (15 minutes)
Upgrades overview (20) – Ed?
Heavy Ion Physics Motivation (30) – Axel?
Spin Physics Motivation (30) – Matthias?

NCC talks

I FVTX: Concept and Implementation (40) – Melynda
II FVTX: Status (30) – Dave
III FVTX: Discussion (20)

FVTX Talks



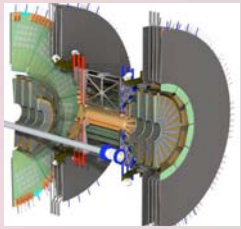
I FVTX Concept and Implementation (40 minutes)

- Detailed presentation of feasibility
- Design Parameters
- Simulations
- Analysis and theoretical efforts required to achieve results in 1st 3 years

II FVTX Status (30 minutes)

- R&D
- Scientific and Technical Resources

FVTX Talks - I



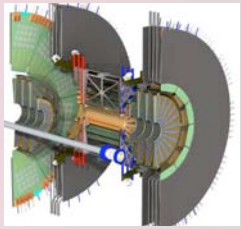
Detailed presentation of feasibility, Design Parameters

- Reminder of physics goals of FVTX: heavy flavor measurements (including charm/beauty separation), improved vector mesons, access to DY
- Design required to achieve these goals: general detector design, design parameters (intro giving limitations of muon system?)

Simulations

- Detector performance simulations: occupancy, DCA, MuTr matching, dE/dx, …
- Physics performance plots:
  - heavy flavor-->R_{AA}, A_{LL},
  - Dimuon improvements (vector mesons, DY)
  - W background rejection;
  - show for different luminosities, indicate (or at least know) if Lvl-1/DAQ advances required…

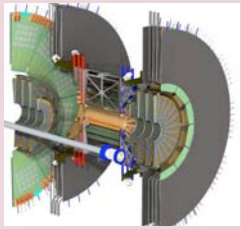
FVTX Talks - I



Analysis and theoretical efforts required to achieve results in 1st 3 years

- First physics will be separating components in single muon spectra, improved dimuon measurements
- Analysis Needs: good DCA resolution, and confirmation of the resolution: alignment, good track finding, good vertex determination, detector resolution extraction (?, fit 2 planes and extract to others, use clean J/psi sample to look at vertex,… ?), global alignment,
- Theory Needs: mainly for spin?
- Workers: more institutions signed for computing support than hardware support; overall: LANL, Columbia, UNM, NMSU, Finland, BARC, Kyoto/KEK, Czech, Iowa, Korean institutions.

FVTX Talks - II



FVTX Status (30 minutes)

Technical Design Overview — 4 min
1. Design Specifications
2. Mechanical Overview
3. Electronics – DAQ Overview

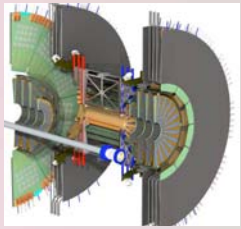
Design and R&D details — 16 min
1. Wedge design
   a. Sensor
   b. HDI
2. Disk design
3. Cage design
4. FPHX design
5. ROC design
6. FEM design

Cost and Schedule — 4 min

Scientific Resources and Manpower — 4 min

Issues and Concerns — 2 min

Possible To-Dos:



Physics Plots with different luminosities - Xiaorong was working on this

Should also include inefficiencies (if not already in), pre-scales if we think we will not be able to take full luminosity

Drell-Yan - estimate of b-b background rejection but not of combinatorial. Can we add this?

Charm/Beauty Separation - qualitative statements made of separation. Should make an attempt to at least place DCA cut and show what happens (on single muon spectra)

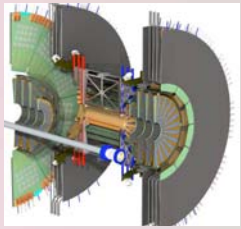
Anything more we can do to defend track-finding capabilities? (Have quoted occupancies, average cluster spacing… for now)

Can we attempt to do a real even vertex reconstruction?

Can we make background-subtracted J/psi, psi' plots? (Xiaorong)

Can we estimate A_N error bars?

Possible To-Dos - Anticipation of Questions



What is the highest risk?:

Technical: FPHX development - any fall-back?, achieving high performance system closely integrated with all these other detectors - what safety margin do we have?

Performance: unexpectedly high occupancies?, high noise, unmodeled material.. degrades performance?, alignment difficulties?,

What is missing from simulations?:

Track finding, what happens when full HIJING background is included?

Any big missing pieces of material in simulation?

Reality factors: noise, detector inefficiencies, track efficiency loss due to multiple effects…

Do we have enough of the right people to pull of the hardware, analysis aspects?

Are cost and schedule realistic enough?

Do we need better trigger/DAQ for different physics?