RHIC head-on beam-beam compensation team meeting

When: 3:00pm – 4:00pm, Thursday, August 16, 2007
Where: MCR meeting room
Who : N. Abreu, W. Fischer, Y. Luo, C. Montag, G. Robert-Demolaize,
J. Alessi, E. Beebe, A. Pikin

Agenda:

W. Fischer: Short Introduction of this project
Y. Luo : Jobs and Job distribution
EBIS experts: E-lens design
Y. Luo : Progress in single-particle simulation tracking
N. Abreu : Progress in multi-particle simulation tracking
G. Robert-Demolaize : Modifying SixTrack for multi-particle tracking

Goal for the RHIC head-on BB compensation with e-lenses

To check the **benefits** and **challenges** in the RHIC head-on BBC

Physics studies

1) reduce the beam-beam tune spread
2) increase the collision beam lifetime ?
3) reduce the store emittance growth rate ?
4) increase the beam-beam paramter ?

In one sentence, can it increase the integrated luminosity ?

E-lens designs

1) Expose the critical challenges in its design
2) Can the design meet the basic requirement from physics
3) how flexible/ what margin in the e-lens design

In one sentence, can the required e-lens be made ?

Jobs and tools in the Physics study

1) Single-particle tracking

responsible: Y. Luo
members : Y. Luo, N. Abreu

Codes : SixTrack, (Tracy-II)
Status : ready and proceeding smoothly

2) Multi-particle tracking

responsible : N. Abreu
members : N. Abreu, Y. Luo

Codes : Lifetrac, SixTrack, ...
Status : not ready

Time line for the physics studies

1) First round of simulation studies should be completed before the end of this year.

Should be able to answer the advantages and disadvantages of using RHIC head-on beam-beam compensation, at least from the point view of Physics.

Should be ready for a physics review meeting.

2) Subtle and specific, but not-critical topics will continue in year 2008.

Strong-strong simulation will start.

The physics study ends and will be well documented by the summer of 2008.

Time line for e-lens design

1) First rough design version of Rhic e-lens (REL) should be ready by the end of this year.

Expose the CRITICAL problems and challenges in the e-lens design, manufacture, installation and operation.

Cost estimate for REL.

Ready for a REL design review meeting.

2) More subtle and specific , but not-critical studies will continue in year 2008.

By the summer of 2008, its full design report should be ready.