

Asymmetric beam-beam interaction

Mike, Wolfram, Simon, Xiaofeng, Yun

2014 May 21 RHIC APEX Session

Motivation

- Experimentally investigate the instabilities and emittance blow-up due to missing beam-beam interaction in some turns.
- For example, for 10 & 100 GeV asymmetric Au-Au collision, bunches will have beam-beam interaction in 110 or 111 turns, followed by 10 turns without beam-beam interaction.
- We use electron lens to generate those beam-beam interaction pattern at store with similar beam-beam parameter to check its effects.

Beam Experiment

- Unfortunately we couldn't use Lisa steering to overlap the ion bunches and electron beam due to software problem.
- In the every end of experiment, we launched electrons with the required special pattern;
- 1) In Yellow ring, the electron beam was immediately shut off due to mis-overlapping.
2) In the Blue ring, the ion beam lifetime was very bad also due to mis-overlapping.
- No meaningful data was taken.

Beam Time Request

- 2 hours next session
- Repeat this experiment

BTW, Lisa steering problem is already solved.