

Correct off-momentum β^* -beat

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Experiment Number: 11-21

Beam Experiment Title: Correct off-momentum beta*-beat

Spokesperson(s): Y. Luo

Status: Approved

Team: Y. Luo, G. Wang, M. Bai, W. Fischer

Experiment Goal: to reduce off-momentum beta*-beat at IP6 and IP8

Benefits: may benefit the luminosity, to be check with simulation and experiment

Experiment Description: -->predict correction strengths offline -->measure dbeta*/ddelta with AC Dipole before and after correction -->scan of correction strength may need -->check BB lifetime or rates with correction

Hazard Analysis: None

Approved By:

Date Approved:

Resources:

Instrumentation: AC dipole

Application: self-written program

Time: 2 * 2.5 hrs.

Personnel: team members + operation team

Intentional Beam Loss? No

Plan for Data Analysis: ASAP

Results: APEX meetings

$$\frac{1}{\beta_{x,y}(s)} \frac{\partial \beta_{x,y}(s)}{\partial \delta} = \pm \frac{1}{2 \sin(2\pi Q_{x,y})} \oint \beta_{x,y}(s') [\mp K_1(s') \pm K_2(s') D_x(s')] \cos(2|\phi_{x,y}(s) - \phi_{x,y}(s')| - 2\pi Q_{x,y}) ds'$$

