

Minutes May 10, 2007

Attendants: Mike Blaskiewicz, Yun Luo, Joanne Beebe-Wang, Dejan Trbojevic, Mei Bai, Wolfram Fischer, Thomas Roser, Natalia Abreu, Rama Calaga, Alfredo Luccio, Christoph Montag

Mike reported on simulations of the resistive wall instability in RHIC, for near-integer tunes below and above the integer. Below the integer, a chromaticity of 4 is needed to counteract the instability; above the integer 2 units are sufficient. The present proton working point of 28.7 is probably worse in this respect than a tune of 29.05.

Christoph and Yun presented recent results from DA tracking studies. Yun's sixtrack studies show little effect of the main dipole b_2 component for tunes below the integer; the comparison for above-integer tunes is underway. Without the b_2 component, dynamic apertures below and above the integer are comparable. Christoph's UAL tracking results (without b_2), however, show a clear preference for tunes below the integer. The reason for the discrepancy between the two codes is presently unclear.

Based on these overall very encouraging results it was decided to go ahead and plan for beam experiments with gold beam to explore the machine behavior at near-integer tunes – main concerns are orbit control, β -beat, and the resistive wall instability. Thomas pointed out that according to experience with near-integer tunes in the AGS, the main effects on orbit and β -beat should be correctable with harmonic correction schemes. Yun and Dejan will be looking into this.

Mei suggested to change the phase advance per FODO cell to 90 degrees. However, after the meeting Christoph realized that this would result in a transition energy above the injection energy, thus requiring a transition jump with polarized protons.