

Nick Tsoupas presented the new quadrupole currents needed for both tunes close to 9 with addition of polarized proton quads in the vertical string. This time, the horizontal tune is lowered to 8.95 and radius is shifted when horizontal quads current is maxed out at 700A. The results show that the horizontal string current is maxed out at about $\gamma = 18$, and a momentum shift ($\frac{\Delta P}{P}$) of 6.5×10^{-3} is need to maintain the horizontal tune at 8.95. The horizontal chromaticity is about -25 in the MAD lattice. Lief will check chromaticities measured in the AGS near the end of June. Mei raised concern about the tune spread due to the large chromaticity. Woody estimated that the tune spread is around 0.02-0.03. Ultimately, the effect on polarization is our primary experiment in next run. Nick also pointed out that the vertical tune quads current has to be lowered before extraction to avoid vertical tune crossing integer (radius has to shift to out side by 6mm). Leif suggests to do beam experiment with gold beam for the chromaticity maneuver at higher energies.

Fanglei presented the progress on realistic spin tracking. She found that the spin tracking started at slightly lower energy than the one used in MAD lattice ($G\gamma = 4.47$ vs. 4.48). It is enough to cause spin mismatch at injection. With correct starting energy, spin matching problem is solved. A 100-particle tracking (horizontal motion only) is going on and will tell us if this will explain the polarization loss at beginning of the energy ramp shown last week. The 100-particle vertical tracking with various vertical tunes after $G\gamma = 39$ reveal that the vertical tune has to be at 8.99 to maintain polarization through $36+\nu$. In a sense, she is trying to define a proper tune path for best polarization transmission. Waldo suggested to do tracking with six dimension to see ant synchrotron resonance effect.

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