Spin meeting minute, 3/8/2006

To prepare for a weaker cold snake operation, we need to know the effect on AtR spin transfer efficiency. Waldo presented his calculation for the polarization transfer efficiency as a function of cold snake strength while keeping the warm snake at 5.9%. The results show that for a 10% cold snake, the yellow effeciency will go down from 99.2% to 99.1%; and blue efficiency will go down from 97.4% to 95.8%.

Alfredo then presented the snake scaling formula for snake strength, orbit excursion, solenoid field. For the real machine, what we need is the current change in quads between a 15% and 10% cold snake. He is going ot do that for injection and a few energies along the ramp.

Nick presented several AGS injection lattices with ν_x around 8.3 and ν_y around 9.1. He used same compensation quads setting as the model for current AGS tune setting. The β_{max} is around 40meters, similar to the current case and dispersion function also behaves reasonably well. These are encouraging results and imply the machine setup time with new tunes won't be very long.

Alfredo presented the spink tracking results with dynamic updating MAD lattices. He use MAD matrices directly instead of recalculating them from spink. The tracking is still one particle tracking. It shows that with $\nu_x = 8.05, \nu_y = 8.976$ throughout the ramp and non-zero horizontal emittance, polarization loss is greatly reduced but not zero as expected.

Haixin