

Nick presented his recent work to explore emittance growth in the AGS. He suggested three possible reasons for the emittance growth: linear coupling, higher order coupling and TEM mode in the RF cavities. As the first step, he tested the one turn matrix for emittance at AGS injection, which has linear coupling terms as two partial snakes are on. The model only shows turn-by-turn emittance oscillation between the two planes. This is expected as the determinant of the transfer matrix is one, as pointed by Ernest. Kevin suggested to include betatron tune and space charge in the model. Since AGS IPM can not take turn-by-turn data, Kevin suggested to use polarimeter to get turn-by-turn data with target at fixed position.

Fanglei presented the plan and status of the SPINK tracking with real lattice. She showed an example of optimizing corrector strengths to reproduce AGS BPM data. The harmonics generated from her model does not agree with what the AGSorbitdisplay showed. Her data also showed a large component at 39th. Kevin suggested that this may be some aliasing effect due to limited number of correctors. Fanglei is working on the script to get the orbit/AGS lattice updated in the SPINK tracking. In the past, Alfredo only updates the snake matrices and some “detuning” quads when updating lattice. The goal right now is to get new MAD lattice with real AGS orbit. Haixin suggested to also test the SPINK code with intrinsic resonance crossing to make sure there is no additional bugs.

Mei reported her effort on orbit response matrix (ORM). She choose sections H and I of AGS. She is still debugging her code but hope can give us answers soon.

Haixin