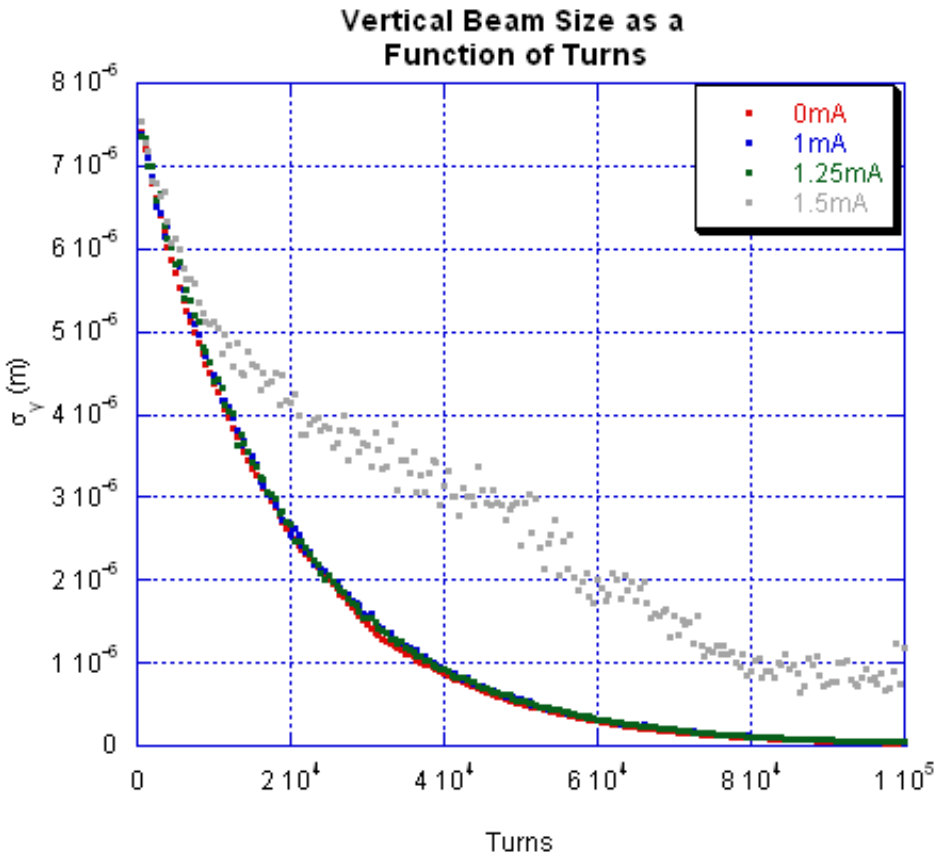
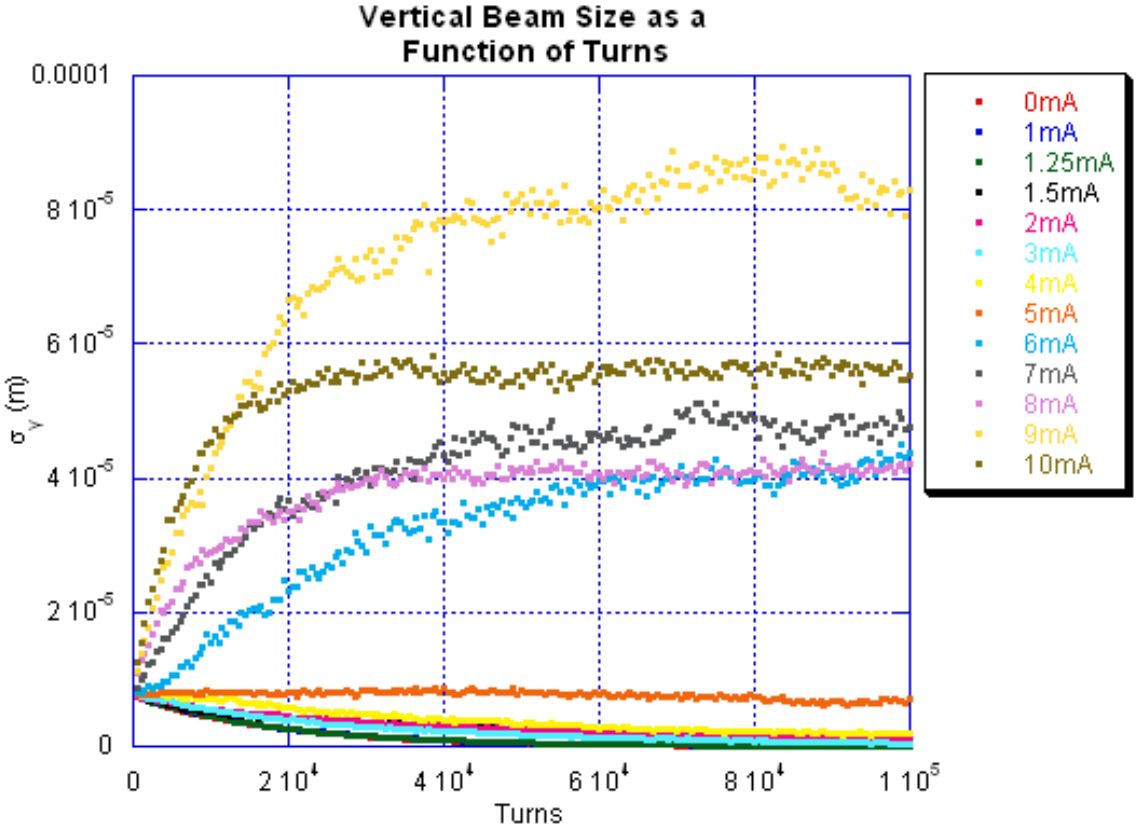
Effects of Space Charge on Vertical Beam Size in CesrTA v4c_s2 Lattice

-Particle tracking job using Dave Rubin's beambeam simulation

-Modified to incorporate space charge module

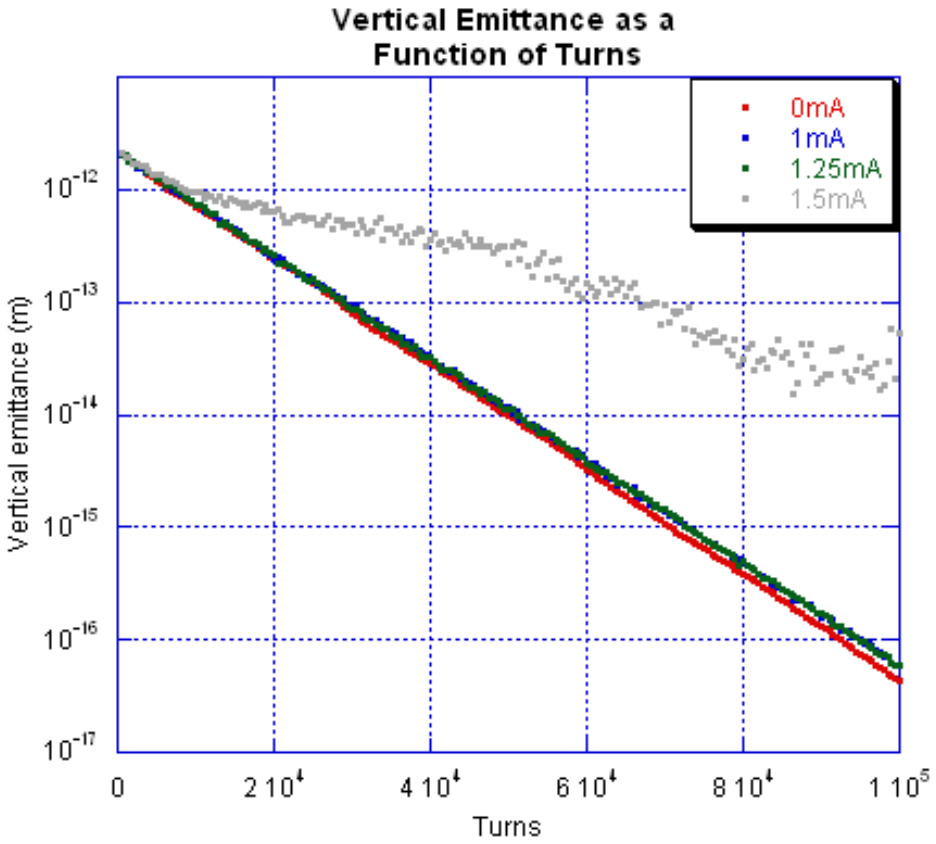
-All scans were run at 1000 particles for 100.000 turns

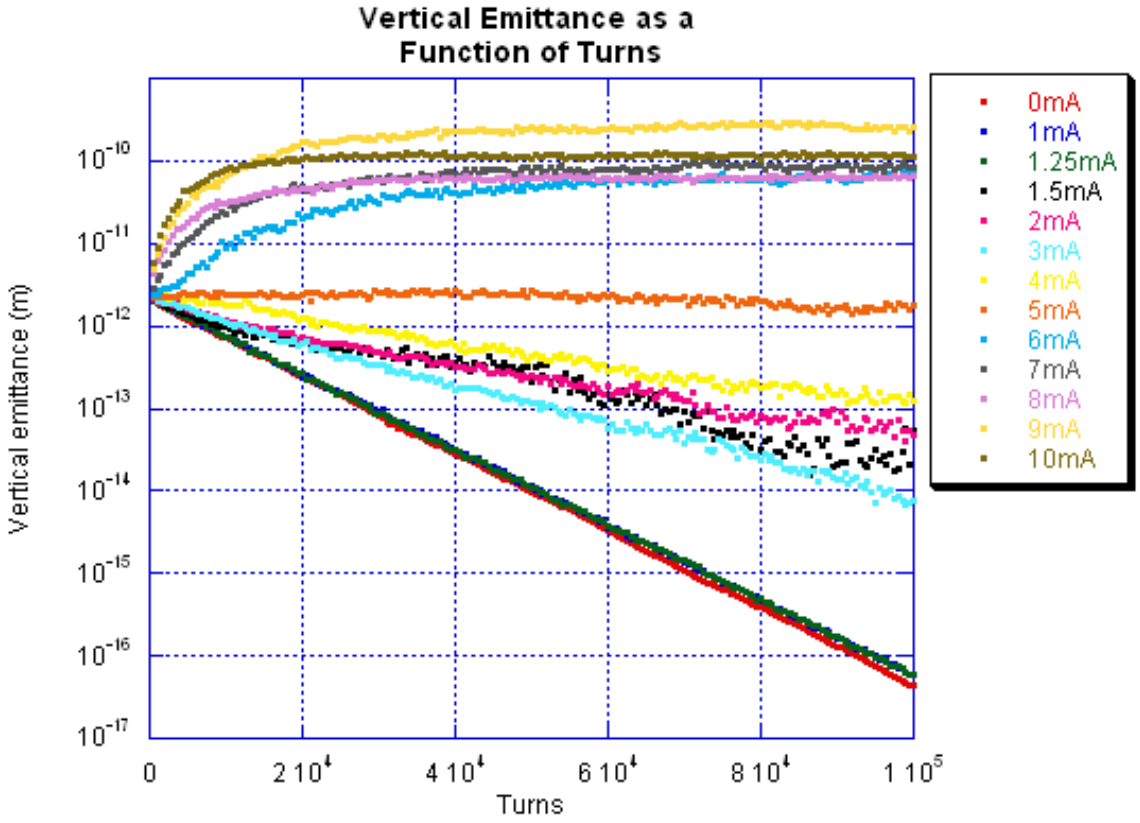




Effects of Space Charge on Vertical Emittance

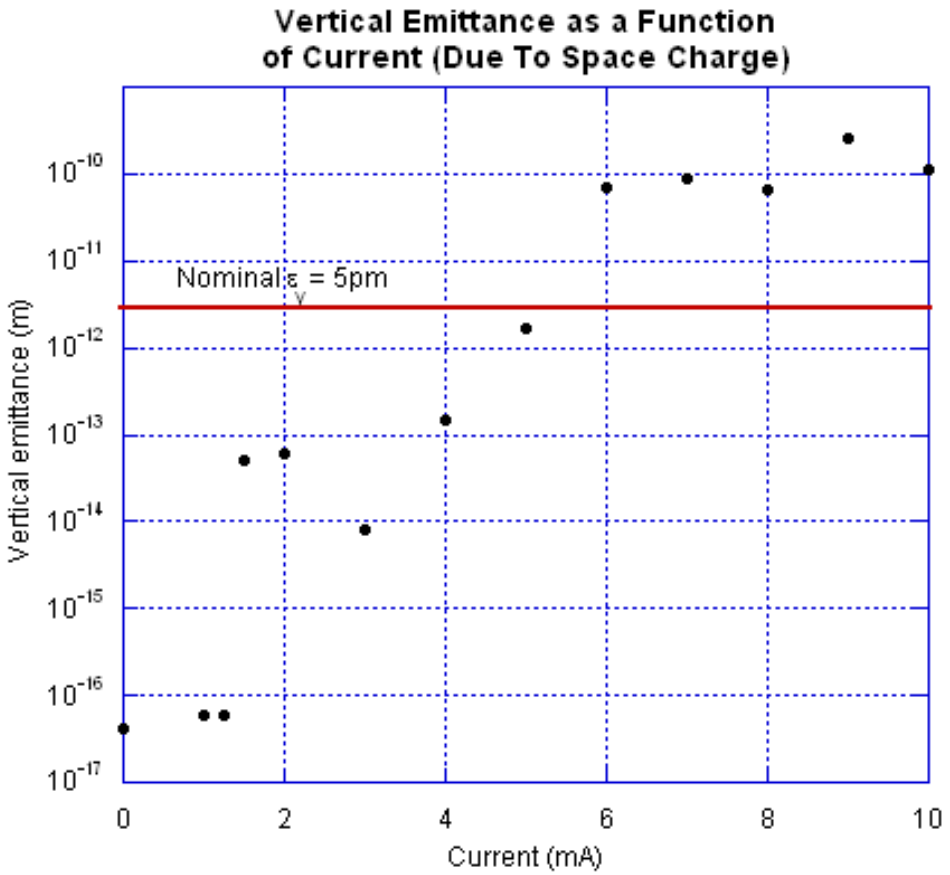
(For $\beta = 27$m)





(Note: These plots are semi-log)

Vertical Emittance Blow-Up due to Space Charge



(Note: This graph is a rough estimate)

Conclusion: Vertical emittance is still dominated by IBS effects under ~4mA