Yun Luo
13:45pm

What can we conclude from long-term measures?

1. What long-term measures from simulation do we have ?

   long-term: 1e6, 1e7 turns, or hours?
   measures : 1e6 turn DA, lifetime, emittance

2. Beam lifetime simulation

   with IBS diffusion
   with hollow Gaussian bunch
   with grids in 6-D phase space

4. emittance calculation

5. Conclusion

BACKUP SLICES:

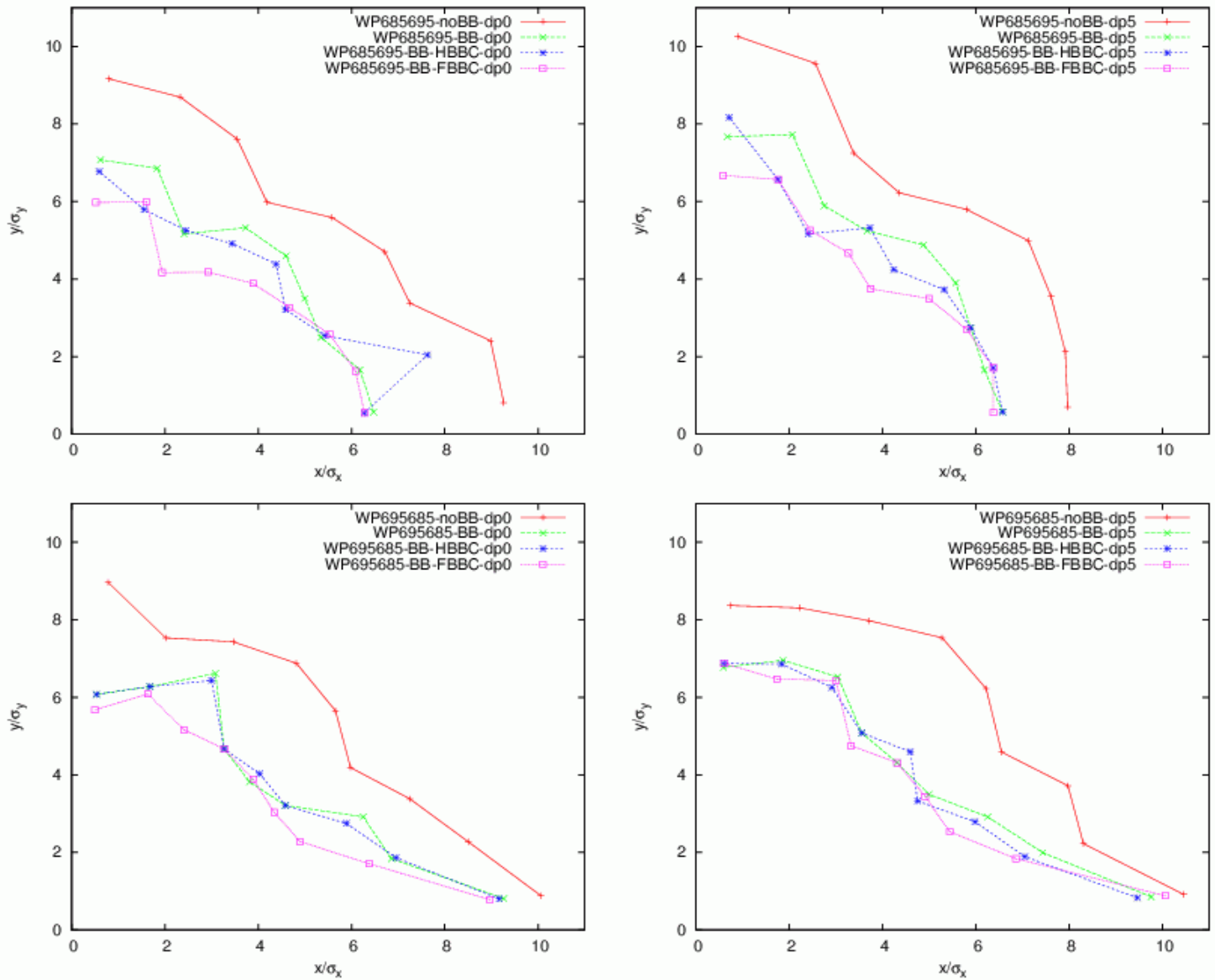
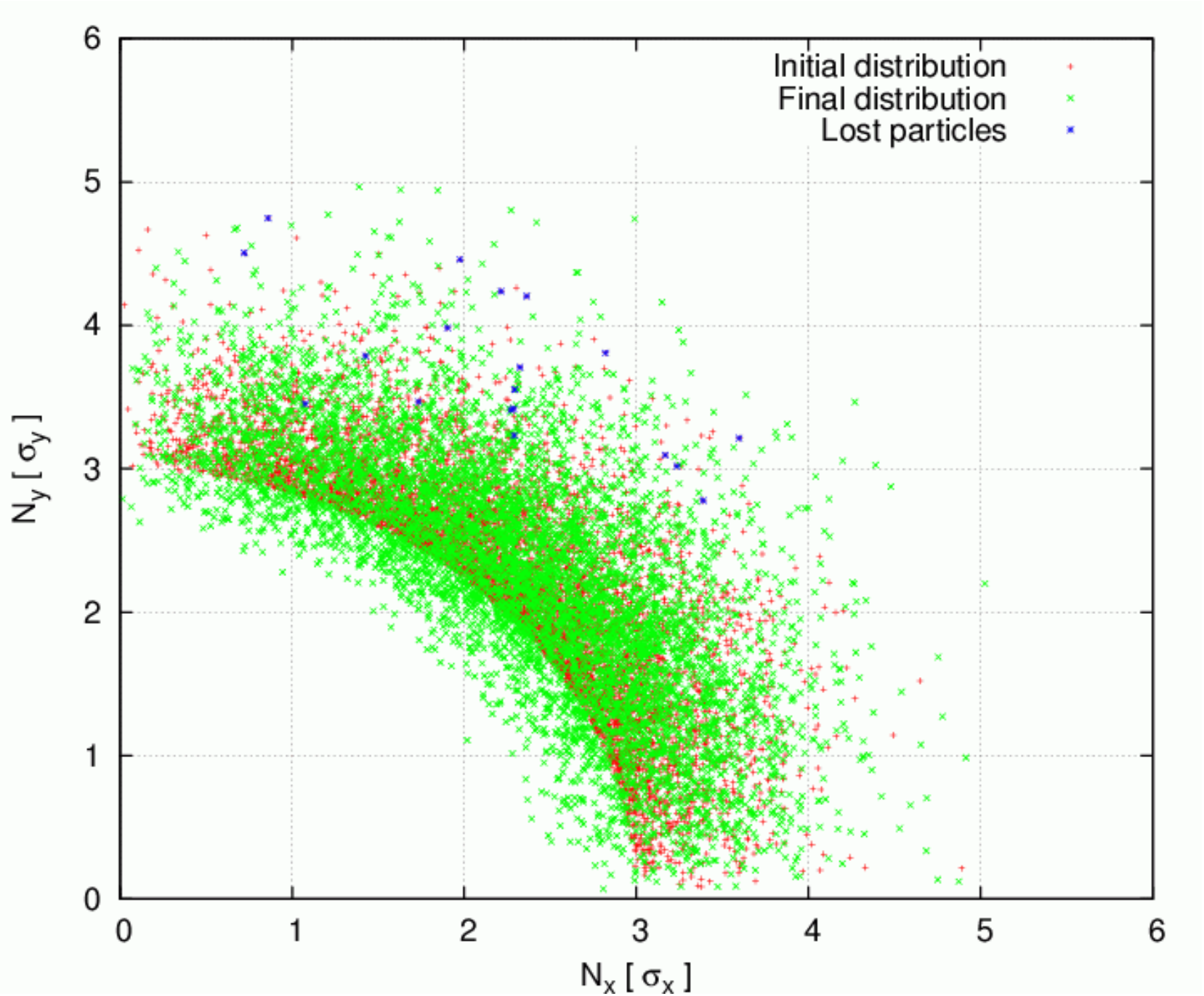


Figure 9: 10^6 turn dynamic apertures. Top-left: on-momentum particles with working point (28.685, 29.695); Top-right: off-momentum particles with working point (28.685, 29.695); Bottom-left: on-momentum particles with working point (28.695, 29.685); Bottom-right: off-momentum particles with working point (28.695, 29.685).


Initial distribution
Final distribution
Lost particles
N_y [σ_y]
N_x [σ_x]
0
1
2
3
4
5
6

Summary of hollow beam tracking

sigma range	macro-particles	representing
0-5	12800	12800
2-5	6400	15497
2.5-5	6400	35630
3-5	6400	105634
4-5	6400	2156698

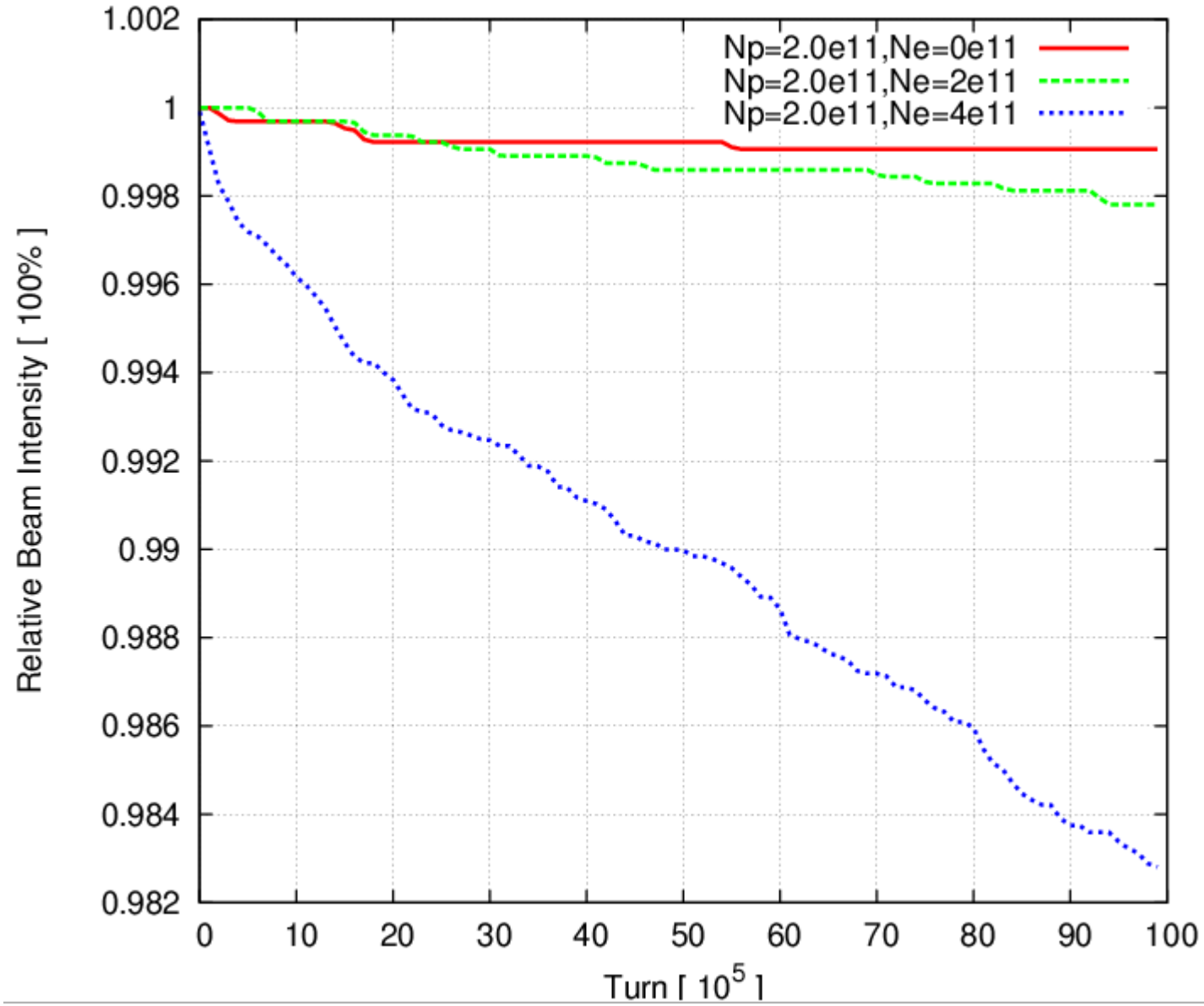
- No much gain with 2-5 sigma hollow beam tracking

- Acceptable tracking is with 3-5sigma hollow beam.

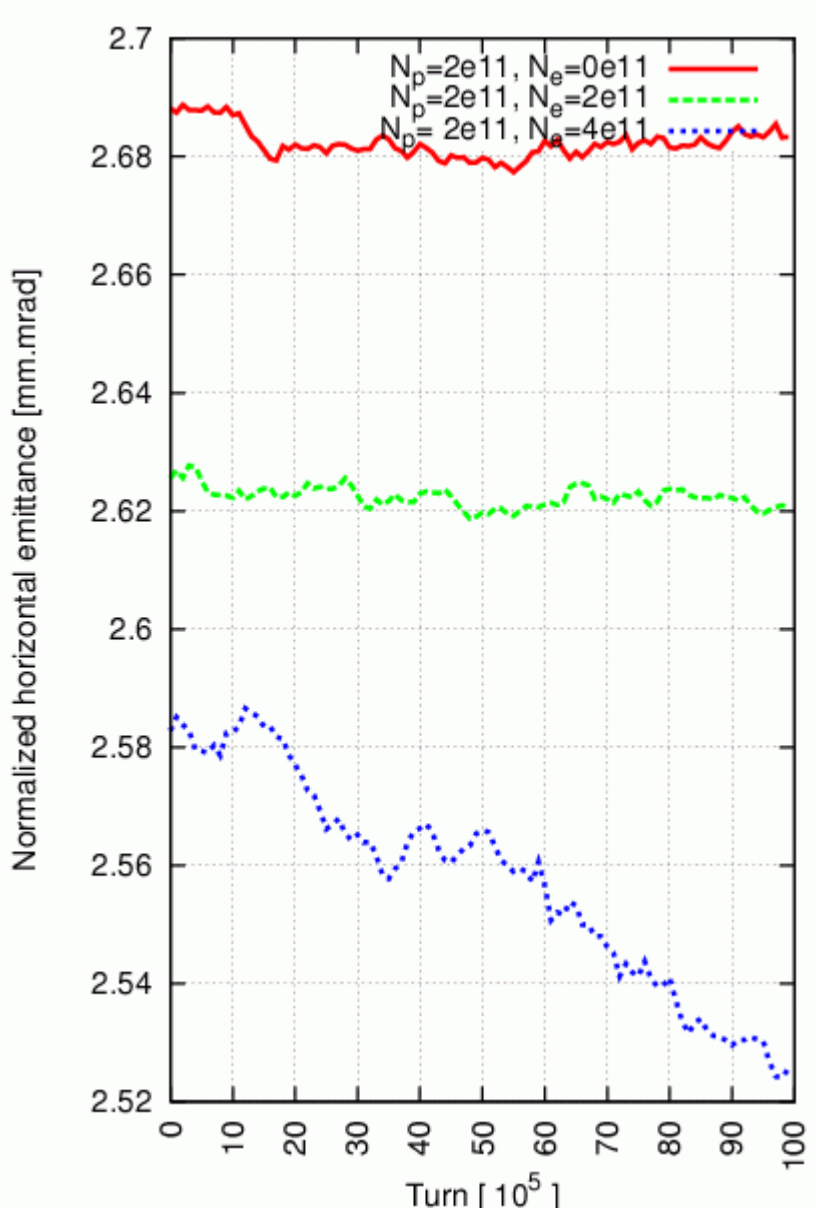
However, this depends on actual dynamic aperture.

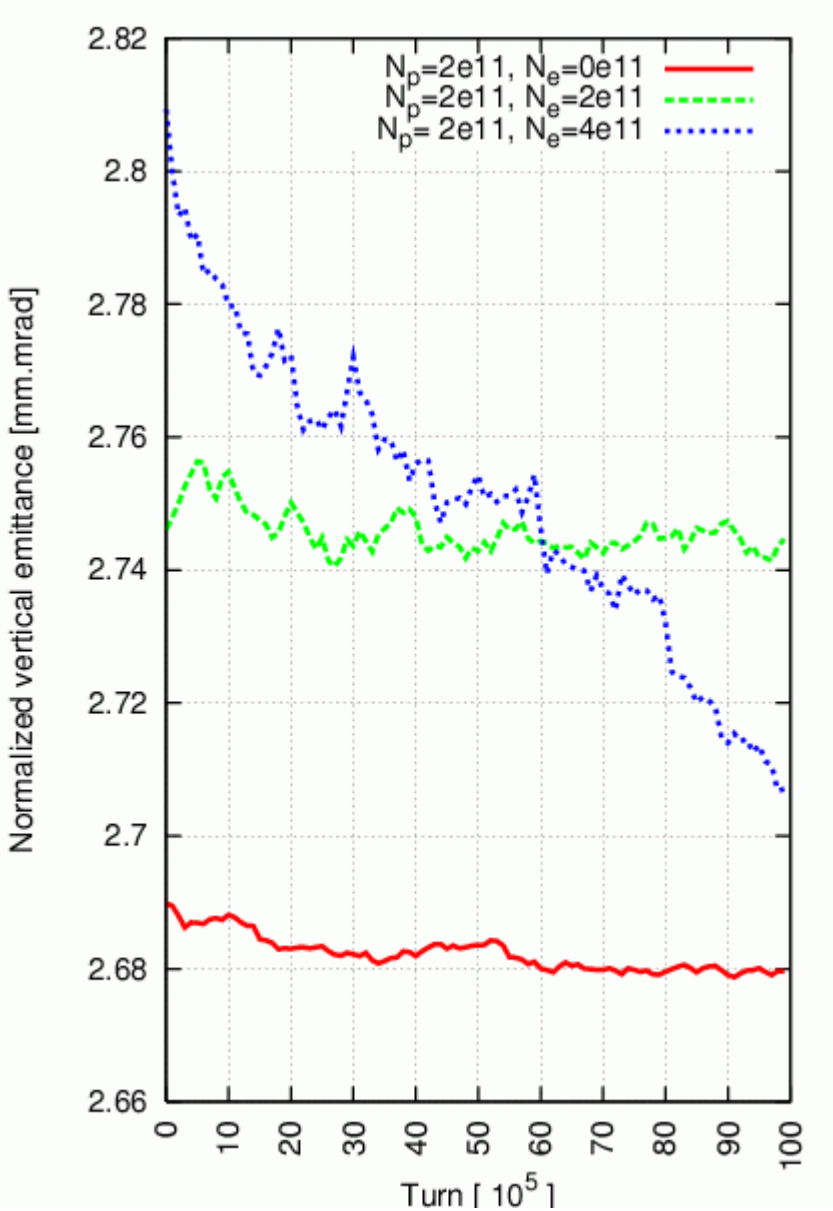
If 10^7 DA smaller than 3sigmas, hollow beam tracking will be abandoned.

beamdeacy_685695_Np2e11_G.ps



emittance_685695_Np2e11_G.ps





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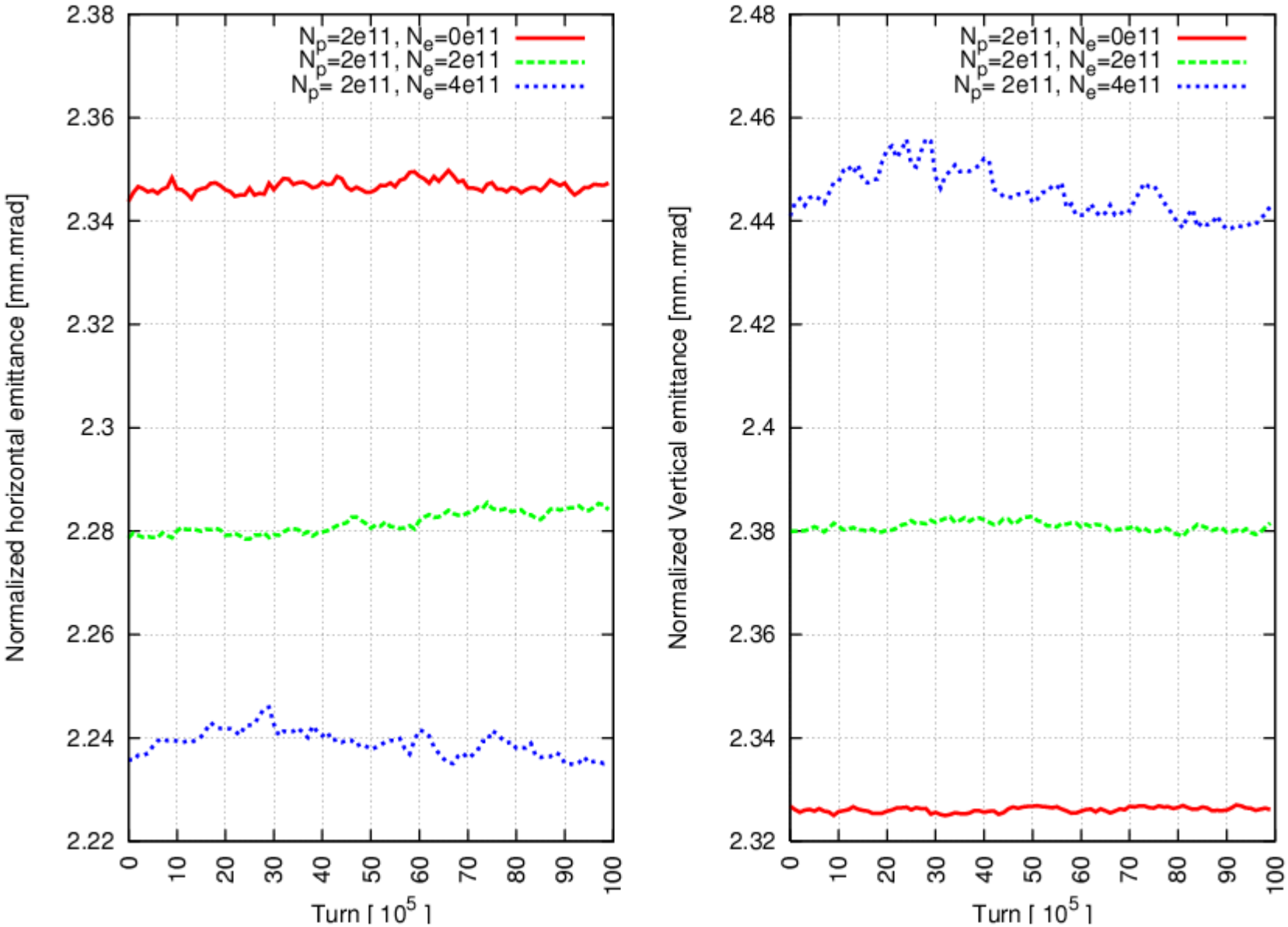

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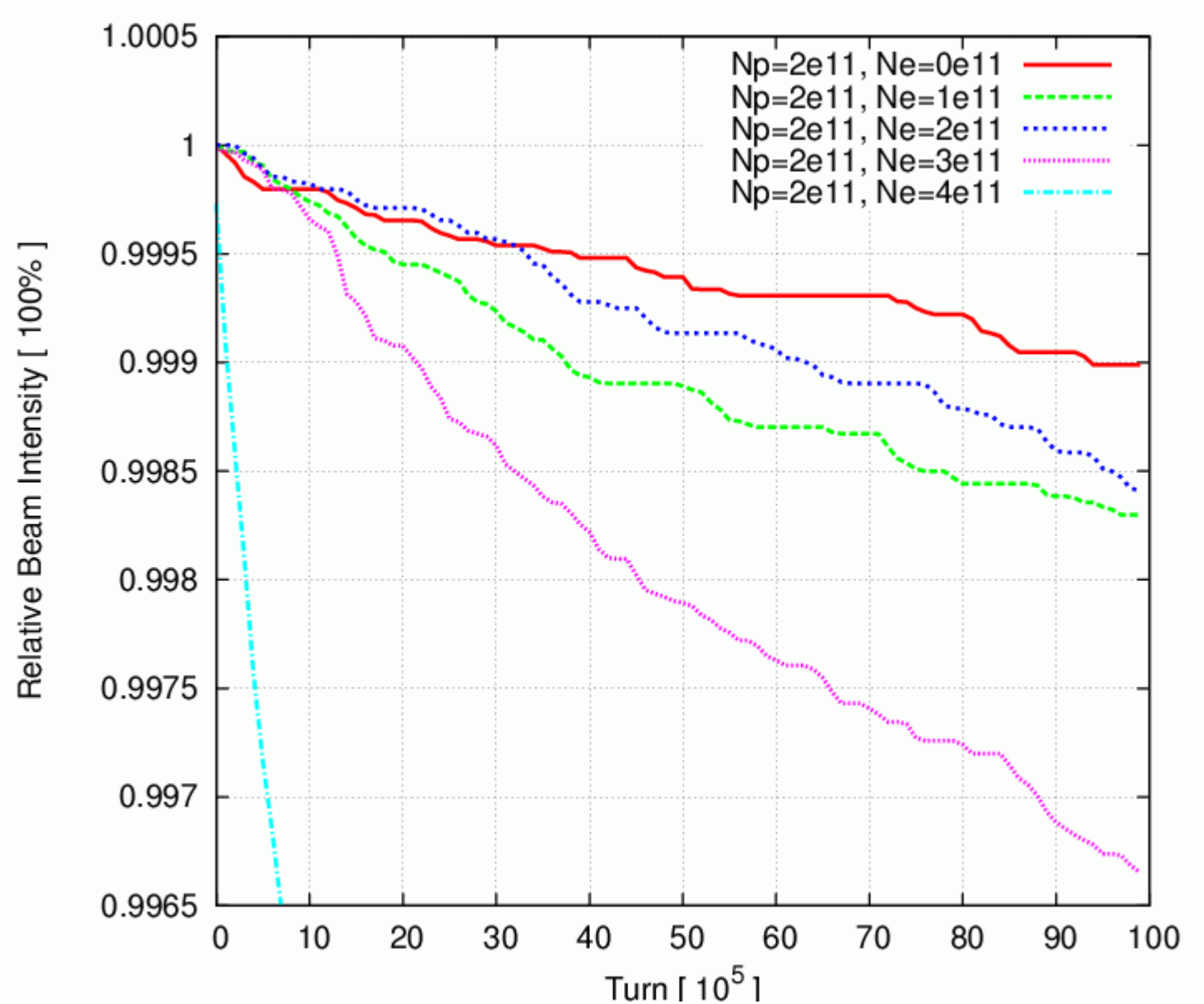

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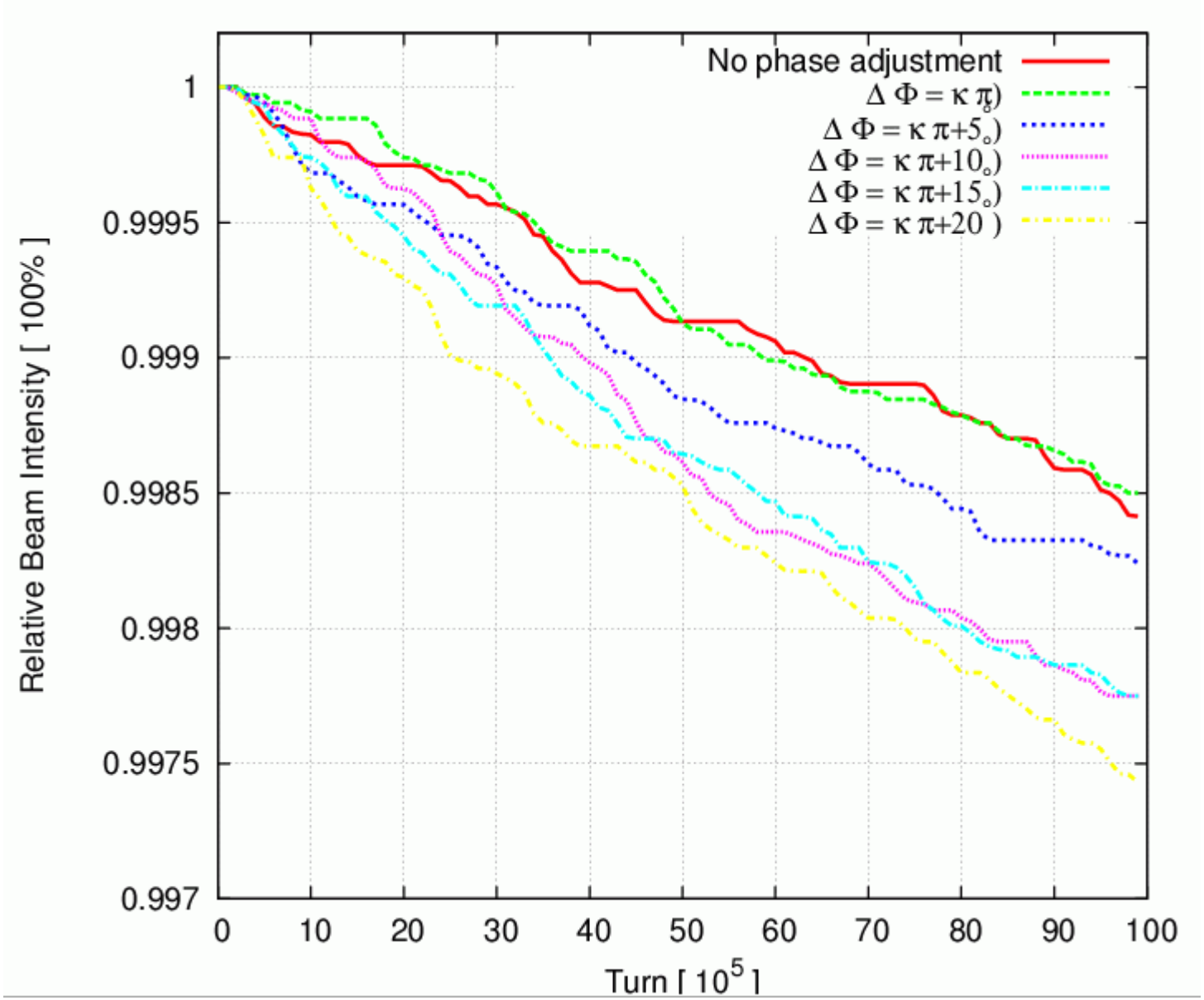
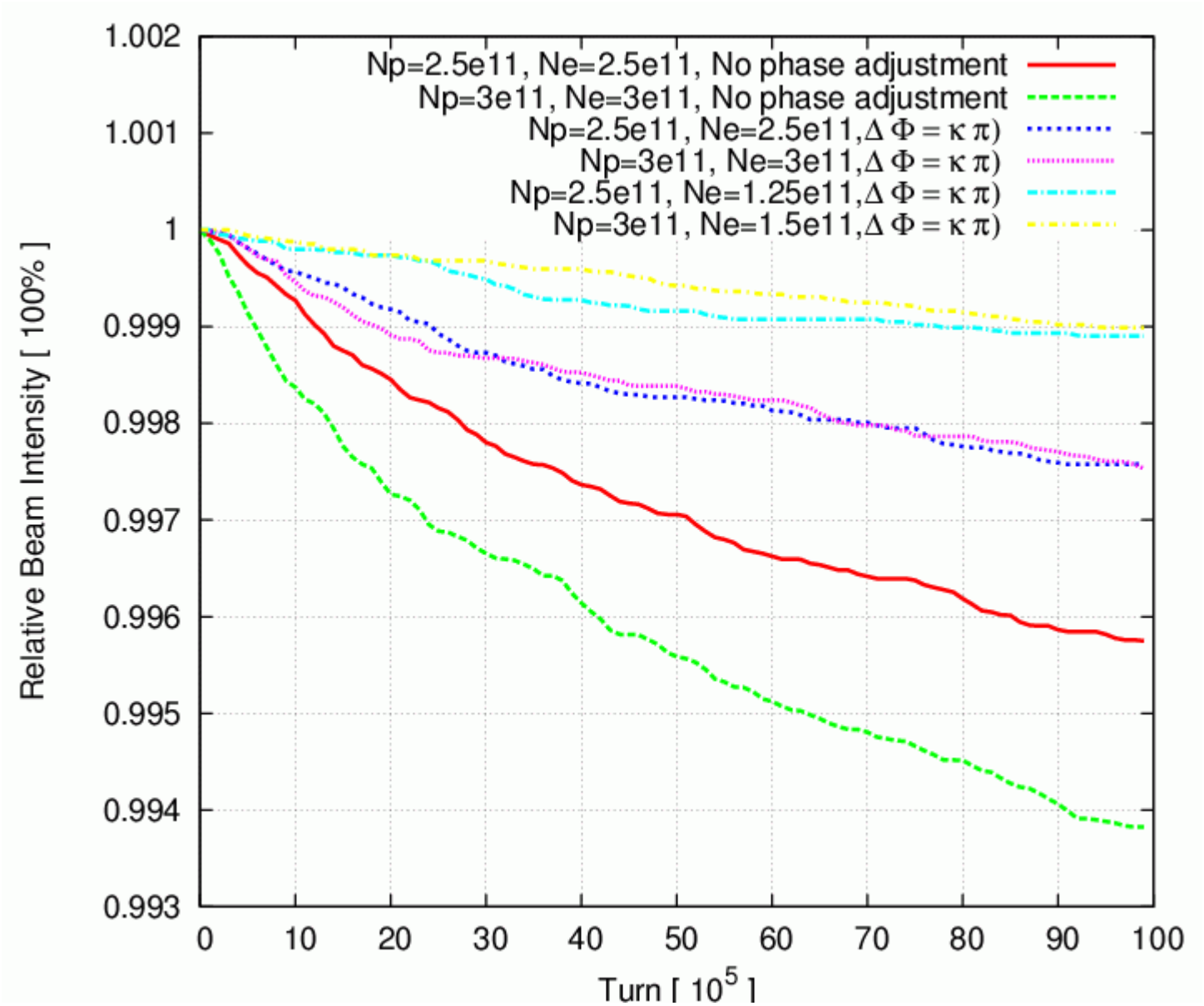
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