

Ten Open Tevatron Beam Physics Questions

06/10/05

1. What is the nature of longitudinal instability at 980?
2. What is the nature of transv.instability at collisions?
3. What TEL should “beam-beam compensate” – tunes, scallops, chromaticities, tails, protons, pbars?
4. Are there coherent strong-strong effects and beam-beam impedance?
5. Why a_1 is 50% different at 980 wrt 150 GeV?
6. Why do tunes and coupling drift at 150?
7. What is contribution of external noises into transv and long emittance growths and what is their nature ?
8. Why pbar losses rates scale $1/\text{Helix}^3$ in Tev and $1/\text{Helix}^5$ in the SPS?
9. Why transverse dampers fight each other?
10. Can β^* be reduced to 15cm?