Michael Ehrlichman
February 5, 2006

Lattice	Beam energy [GeV]	Particles per bunch [10^{10}]	Bunch length [mm]	Touschek lifetime from BMAD Piwinski [min]	Touschek lifetime from BMAD Wiedemann [min]	Touschek lifetime from DRCR Wiedemann [min]
PPA	5.0	2.4	6	14	8	16
OTW	5.0	2.2	6	16	13	17
OCS	5.066	2.0	6	34	29	33
BRU	3.74	2.0	9	14	10	18
MCH	5.0	2.0	9	93	77	68
DAS	5.0	2.0	6	52	40	44
TESLA	5.0	2.0	6	62	52	50

NOTE: The DRCR calculation assumes a constant equilibrium beam size throughout the lattice. The document says that it gets this beam size from an earlier table (Table 2.1). While I have found the necessary information (horizontal emittance & mean horizontal beta function) to calculate the horizontal beamsize, I have not yet found the vertical emittance referred to.

The beam parameters BMAD calculates are slightly different from what is listed in the DRCR. For example, MCH is listed as having a bunch length of 9 mm, but BMAD calculates a bunch length of 9.35 mm. I would like to run the BMAD Wiedemann calculation again with σ_x, σ_y, and σ_z fixed to their equilibrium values listed in the DRCR.