

Design Beam Energy of ATF2

K.Kubo and S.Kuroda 20050524

ATF has been operated almost always at beam energy about 1.3 GeV and it will not be changed for ATF2, while the design energy of ATF was 1.54 GeV[1]. Operation energy has been sometimes quoted as '1.28 GeV' and sometimes '1.3 GeV'. So far, the beam energy has never been measured accurately. The number '1.28 GeV' comes from the estimated field strength of the bending magnets in the damping ring. This field strength is given based on field measurement before the installation. Because these bending magnets have combined function, it is very difficult to evaluate accurate field strength at the real beam orbit from the measurement. Then, the evaluated beam energy can not be accurate. Considering this, probably, there is no reason to argue that 1.28 GeV is more accurate than 1.3 GeV.

As conclusion,

- (i) ATF2 should be designed for the beam energy of 1.3 GeV, and
- (ii) this number should be used in documentations.

[1] ATF Design and Study Report, KEK Internal 95-4,1995.