

Measurement of Local Longitudinal Loss Factor Using BPM's in TRISTAN MR, Chuang Zhang for TRISTAN Light-Source Commissioning Group, KEK - Transverse loss factor or impedance can be determined by means of single-pass BPM's, as demonstrated in LEP. TRISTAN operated as a light source at 8 GeV and 10 GeV late 1995. We use the "DC" BPM's to record the beam orbits as functions of their currents and RF voltage in TRISTAN Main Ring, and in this way to measure the beam energy saw contributed mainly by both synchrotron radiation and parasitic losses. The energy loss due to the synchrotron radiation is about 4 MeV per turn in TRISTAN at 8 GeV, which is in a same order of magnitude compared to the estimated parasitic effect in the ring other than the RF section. The synchrotron radiation effect on the beam energy is eliminated by subtraction of two sets of BPM readings for different beam current or RF voltage and then determine the local property of the longitudinal impedance in the ring. In this paper, the principle and the procedure of the measurement are described, the results are discussed in comparison with the calculation.