

Present Status of KEKB Project, S.KUROKAWA,
KEK - Present Status of KEKB project Shin-ichi Kurokawa, KEK, High Energy Accelerator Research Organization The KEK B-Factory, KEKB, is a two-ring, asymmetric-energy, electron-positron collider for B-physics. 8 GeV electrons stored in a high-energy ring (HER) and 3.5 GeV positrons in a low-energy ring (LER) collide at an finite angle of 2×11 mrad, at an interaction point (IP), which BELLE detector surrounds. In order to facilitate the detection of CP-violation effect at the bottom-quark sector, the machine is designed to reach a luminosity goal of $10^{34} \text{ cm}^{-2} \text{ s}^{-1}$. Even with a high beam-beam tuneshift of 0.05 and a small β_y^* of 1 cm at IP, required currents in the rings amount to be 1.1 A at HER and 2.6 A at LER. KEKB adopts a few new schemes, such as finite-angle crossing at IP, non-interleaved sextupole chromaticity correction to get large dynamic apertures, normal conducting ARES cavities and superconducting single-cell, single-mode cavities to combat high beam loading, among others. The 2.5 GeV injector linac is being upgraded to 8 GeV to make direct injection into the rings possible and increase the intensity of positrons. This five-year project started in 1994 and 1998 is the last year of its construction. The upgraded linac will be commissioned in May 1998 and the rings in October 1998.