

TLEP/LEP3 Accelerator

Thursday, 14 February 2013 14:00 (45 minutes)

We will present tentative design parameters, novel concepts and accelerator-physics challenges for these two circular e^+e^- Higgs-factory colliders. They both require –in addition to the collider ring –a fast cycling accelerator ring for quasi-continuous top-up injection to compensate for the short beam lifetime due to radiative Bhabha scattering. In addition, a large momentum aperture and flat beams are needed to ensure an adequate beam lifetime with regard to beamstrahlung. Both TLEP and LEP3 become Tera-Z factories when operated around the Z pole. The 80-km tunnel of TLEP would also provide a path towards much higher energies, e.g. it could later accommodate a very high energy LHC (“VHE-LHC”), with a centre-of-mass energy approaching 100 TeV in pp collisions.

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