

The CLIC Study of a 0.5 to 5 TeV e[±]- Linear Collider, J.P. DELAHAYE for the CLIC TEAM* - The CLIC study of a high energy (0.5 to 5 TeV) and high luminosity (10^{34} to 10^{35} cm⁻² sec⁻¹) e[±]- linear collider is presented. Beam acceleration with high frequency (30 GHz) normal conducting structures operating with high accelerating fields (100 to 200 MeV/m) significantly reduces the length and, in consequence the cost of the linac. Based on new beam and linac parameters derived from a recently developed set of general scaling laws for linear colliders, the beam stability is shown to be similar to lower frequency designs in spite of the strong wake-field dependence on frequency. The generation of the drive beam for RF power production by the so-called "Two Beam Acceleration (TBA)" method, is based on a novel scheme that is potentially very efficient, cost effective and reliable. It relies on a conventional heavily loaded linac at low frequency (625 MHz) and RF multiplication by beam funneling in compressor rings. Recent 30 GHz hardware developments and results from the CLIC Test Facility assessing the feasibility of the scheme are described.

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