

The CLIC Main Linac Bunch Compressor,
E.T. D'AMICO, G. GUIGNARD, CERN,
T. RAUBENHEIMER, SLAC - The latest version of the CLIC parameters implies the acceleration in the main Linac a train of bunches with a very short bunch length around 50 mm rms and an uncorrelated fractional energy spread at injection of about 1%. On the other hand, the damping ring design imposes a starting bunch length of 3 mm and a fractional energy spread of about 0.08%. This paper describes the bunch compression chain which achieves the required compression for both positrons and electrons. Criteria taken into account in the choice of the compression ratios at different stages are outlined as well as the main parameters for the first order design. Results of tracking in the longitudinal plane including high order magnetic effects and wakefields are reported. Finally multibunching is considered and its consequences studied. This analysis shows that the proposed system is able to provide the beam at the entrance of the main Linac with the required characteristics.