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Design of CLIC Beam Delivery System at 7 TeV

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The Compact Linear Collider (CLIC) is a proposed linear accelerator designed to collide electrons and positrons at energies up to 3 TeV. In order to explore new physics and to be more competitive with other collider projects, CLIC is exploring the increase of the center-of-mass energy to 7 TeV. The CLIC Beam Delivery System (BDS) transports the lepton beams from the exit of the Main Linac to the Interaction Point (IP). This paper reports on the studies and the challenges of the new BDS design, such as minimizing the extent of trajectory bending for collimation and chromaticity correction to reduce the effects from synchrotron radiation, ensuring a good transverse aberration control at the IP.

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