

SAFE DISPOSAL OF THE LHC BEAMS BY EXTRACTION ONTO THE BEAM DUMPING BLOCKS

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Abstract

The function of the LHC beam dumping system is to fast-extract the beam in a low-loss way from each ring of the collider and to transport it to an external absorber, positioned sufficiently far away to allow for appropriate beam dilution in order not to overheat the absorber material. Fast extraction will require a particle-free gap in the circulating beam, during which the field of the extraction kicker magnets can rise to its nominal value. Given the destructive power of the LHC beam, the dumping system must meet extremely high reliability criteria, which condition the overall and detailed design.

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