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## Improved Concept of HE-LHC Beam Dump

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High energy upgrade is foreseen for LHC in the future. At the High-Energy LHC (HE-LHC), the proton beam energy is increased to an upgrade value of 13.5 TeV. The dedicated beam dump per ring must absorb 1.3 GJ energy carried by the proton beam and concentrated in the small region around the beam axis. Beam dilution system is foreseen in order to reduce maximum deposited energy density to an acceptable level. The maximum energy deposition of all bunches occurs at the same longitudinal position inside the standard absorber. That region experiences an enormous temperature rise compared with the surrounding parts of the absorber. We propose an improved type of beam absorber which spreads out the deposited energy in different longitudinal positions from the front surface of the absorber, thereby reducing the maximum temperature. Two different types of absorbers are considered: multi-material mosaic and distorted shapes, respectively.

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