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Tevatron Beam Halo Collimation System: Design, Operational Experience and New Methods

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(Submitted on 2 May 2012)

Collimation of proton and antiproton beams in the Tevatron collider is required to protect CDF and D0 detectors and minimize their background rates, to keep irradiation of superconducting magnets under control, to maintain long-term operational reliability, and to reduce the impact of beam-induced radiation on the environment. In this article we briefly describe the design, practical implementation and performance of the collider collimation system, methods to control transverse and longitudinal beam halo and two novel collimation techniques tested in the Tevatron.

Submission history

From: Mokhov, Nikolai [view email] [via ROB proxy]
[v1] Wed, 2 May 2012 19:13:54 GMT (1351kb)

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