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Status and future of the Beam Gas Curtain: a non-invasive profile and emittance monitor for high-intensity hadron machines.

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High-intensity hadron machines host beams with destructive power, and traditional beam profile monitors, such as scintillating screens and wire scanners, suffer a short lifetime under such severe conditions. The application of the beam gas curtain monitor (BGC) in the LHC, along with 2 years of successful operation, fills the gap in such measurements in a minimally invasive manner for high-intensity hadron machines. By using a supersonic gas curtain with a tailored shape and gas density, the monitor satisfies the requirements of vacuum, resolution, and machine protection. In this contribution, the operational experience of BGC in the LHC will be discussed, as well as the development plan in the phase of HLLHC, and the possible halo monitor for hadron machines.

Footnotes

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