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Radiation levels produced by the operation of the Beam Gas Vertex monitor in the LHC tunnel at IR4

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The Large Hadron Collider at CERN is equipped with instruments that exploit collisions between beam particles and gas targets, one of them being the Beam Gas Vertex monitor. By design, its operation generates secondary particle showers used to measure beam properties, that also result in radiation levels in the tunnel proportional to the beam intensity and gas pressure. In this work, the radiation showers are characterised using measured data from LHC Run 2 operation and Monte Carlo simulations with the FLUKA code, and predictions are made for the operation of these devices in the HL-LHC era.

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Footnotes

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Yes

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