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Greening Resistive Plate Chamber detectors for HEP applications.

Resistive Plate Chambers (RPCs) are among the most widely used gaseous detectors for High Energy Physics applications, especially in trigger and muon identification systems. At present, they are typically operated in avalanche mode, with a large fraction of fluorinated gases whose use and availability have been drastically limited by the European Union given their high Global Warming Potential.

An intense R&D activity is ongoing to improve RPC technology in view of future HEP applications and to investigate the detector performance when operated with eco-friendly gas mixtures. Highlights of these performance studies, carried out at the CERN Gamma Irradiation Facility (GIF++), will be given in this talk.

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