Contribution ID: **1388** Type: **Parallel session talk**

Mitigation of the ATLAS RPC environmental impact

Friday 19 July 2024 11:05 (15 minutes)

ATLAS RPC detectors have been operated with a gas mixture selected after an extensive R&D work and consisting of 94.7% C2H2F4, 5.% i-C4H10, and 0.3% SF6. The gas mixture has a high environmental impact, having a Global Warming Potential (GWP) of about 1400. So all possible measures to reduce its dispersion into the atmosphere should be put in place.
The contribution of RPC detectors to global warming has become more evident due to gas leakage issues experienced in ATLAS. Almost 4000 RPC chambers located in the ATLAS cavern are being damaged due to the high sensitivity of the materials used for gas inlets.
The proposed solutions or mitigations of the problem ranging from the repair and prevention of detector leaks to the replacement of the actual gas with environmental friendly mixtures will be presented. The measures already implemented and the ongoing studies with new mixtures will be also shown.

Alternate track

I read the instructions above

Yes

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