

Performance of the Multigap Resistive Plate Chambers of the Extreme Energy Events Project

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The muon telescopes of the Extreme Energy Events (EEE) Project are made up of 3 Multigap Resistive Plate Chambers (MRPC). The whole array is composed of 61 telescopes installed in Italian High Schools, constructed and operated by students and teachers, constantly supervised by CREF and INFN researchers.

The unconventional working sites are a unique test field for checking the robustness and the low-ageing features of the MRPC technology for particle tracking and timing purposes. The MRPCs are fluxed with a standard mixture (98% C₂H₂F₄ - 2% SF₆), of greenhouse gases (GHG) phasing out of production.

The EEE Collaboration aims to find an environmentally and economically sustainable gas mixture in order to reduce GHG emissions, without affecting MRPC excellent performance.

Performance in terms of time and spatial resolution, efficiency, tracking capability and stability will be described, together with a comparison with expectations and with the results obtained using new gas mixtures.

TIPP2020 abstract resubmission?

No, this is an entirely new submission.

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Primary author: RIPOLI, Cristina (University of Salerno)

Presenter: RIPOLI, Cristina (University of Salerno)

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