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PET: a high threshold Nuclear Track Detector (NTD) for rare event search

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Nuclear Track Detectors (NTD) have been used in the detection of heavy charged
particles for many years. Their main advantage, apart from low cost and ease of use, is the existence of natural thresholds of registration, which provide a natural and easy way of suppressing the background in an experiment looking for rare events (e.g. Strangelets, Monopoles) in cosmic rays and particle accelerators. In this presentation, I will talk about how an inexpensive, commercially available plastic called Polyethylene Terephthalate (PET), commonly used as a packaging and bottling material, was found to be suitable as a NTD with a threshold much higher than many other materials commonly used as NTDs. I will describe some of the processes used to characterize and calibrate PET and present some results from pilot studies where PET films were given open air
exposures at various high altitude locations.

Presentation type

Invited talk

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