

Workshop on Advanced Radiation Detector and Instrumentation in Nuclear and Particle Physics (Online)



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Charging up studies in thick Gas Electron Multipliers

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The time-dependent variation of detector response in MPGDs, especially THGEMs, is one of the challenging problem that has been attributed to the “charging up” and “charging down” processes of insulating materials present in these detector. Experimental studies of stabilization of gain with time due to these phenomena in argon-based mixtures under various experimental conditions have been given in the presentation. Effects of different sources with varying irradiation rates on the gain saturation process have been studied. Low-rate source shows two-step gain stabilization phenomena, one short-term saturated gain, another long-term saturated gain, whereas high-rate source shows just one-step gain saturation. While this two-step stabilization has been attributed to the charging up of the rim by earlier studies, its effect seems to be subdued for high-rate irradiation according to the observations presented here. The final results provide an insight into the transients of gain saturation in THGEMs

What is your experiment?

Charging up studies in THGEM

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