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Micro-pattern detectors based on plasma panels: Past, present, and future developments

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Micro-patterned plasma panels are emerging as a new promising particle detector type whose concept originated from plasma-TV technologies. The idea is to utilize the high spatial resolution of hermetically sealed gas cells and transform them into independent micro-Geiger counters, thus creating a scalable, low mass, long life, fast, gas sealed and inexpensive particle tracker. Experimental results will be presented for two distinct 1st generation prototype designs which have yielded volt size pulses (without amplification), signal rise times and time dispersion (for beta particle radiation) of ~ 3 ns, FWHM < 3 ns. Voltage stability and operating window, rate response, and gas mixture results will also be presented. Possible applications in high energy and nuclear physics and goals for future prototypes will be discussed.

Oral or Poster Presentation

Oral

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