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Development of gaseous particle detectors based on semi-conductive plate electrodes

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A new kind of particle detector based on Resistive Plate Chamber structure is under development. Semi-Conductive electrodes with resistivity up to 10^8 Ω·cm are introduced to improve Rate Capability performance. The aim is to obtain a radiation hard detector with sub-nanosecond time resolution capable of working in high rate environment (order of MHz/cm2). In this presentation some results on two configurations under test are described. The first characterized by 1mm gas gap and both SI(Semi-Insulating)-Gallium Arsenide electrodes (~10^8Ω·cm), and the other characterized by 1.5mm gas gap, one SI-GaAs electrode and one intrinsic Silicon (~10^4Ω·cm) electrode.

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