

X. Workshop on Resistive Plate Chambers and Related Detectors

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Performances of silicone coated high resistive bakelite RPC

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High resistive bakelite RPCs, made with silicone compound coating, applied to the inner electrode surfaces, are studied in a cosmic ray test bench. The long term tests of the RPCs operated in streamer mode with gas mixture of Ar/isoC₄H₁₀/R-134a= 34/7/59 (mass ratio), show stable efficiency > 90% and time resolution ~ 2 ns (FWHM). Comparative studies of performance of the RPCs, made with different types of silicone coatings are done, and attempts are made to analyze the differences based on studies of various detector parameters. The same RPCs, when operated in avalanche mode, show efficiency > 95%. Charge spectra of the RPCs, operated in two different modes are also studied, and the results will be presented.

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