

# A Monte Carlo simulation to study the surface roughness effect on RPC performance

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The roughness of the inner surface of resistive plates plays an important role on the performance of RPC. A Monte Carlo simulation method has been developed for the trigger RPC operating in avalanche mode. Propagation of charged particles through the RPC gas, generation of electrons and their multiplication as well as the saturation and induction [1] are implemented. Experimental data will be compared with the Monte Carlo results.

We have developed a model to simulate the surface roughness with varying degree and their effect on the electric field inside the RPC volume. The influence of surface roughness on the efficiency and time resolution will be presented.

1.Werner Riegler et al., NIM A 500 (2003) 144.

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