

Streamer studies in RPCs

Wednesday, 21 February 2018 16:00 (20 minutes)

The work presented here is an update of the presentation given in the previous RPC workshop, aimed at finding an eco-friendly gas mixture for streamer operation of RPCs. Indeed the streamer working regime is still suitable for building large RPC systems dedicated to low rate applications, such as cosmic ray and neutrino physics.

As a completion of the gas mixture already considered, the quenching power of CF₄, a gas widely used in other gaseous detector, has been investigated in RPCs.

In addition to the gas composition, the effect of the gas gap thickness on discharge quenching has been studied. This is an important check because thin gas gaps of 1 mm, one half of the typical value previously used, have been introduced for the needs of LHC applications.

Finally preliminar results about streamer to avalanche delay are reported. These measurements could be exploited to disentangle between different models of streamer formation.

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