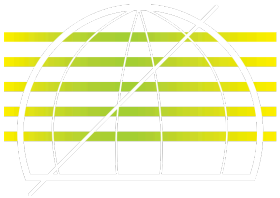

RPC 2022

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Study of Ionic signal properties with different readout methods.

Friday, 30 September 2022 11:40 (20 minutes)

The simultaneous measurement of the ionic and the fast prompt signals is fundamental for the understanding of the working principles of the RPC detector.
Typical RPC electrodes are made of resistive material with the voltage applied on a thin graphite layer, whose resistivity change the ionic pulse shape depending on the discharge position.
We have therefore realized a small RPC detector with a metallic grid deployed in one of the resistive electrodes, specifically designed for the precision measurement of ionic pulse shape and charge. Typical copper strips pick-up allows reading the signal by capacitive coupling on the opposite electrode.
The purpose of the study described in this presentation is to test different ion signal read-out systems and the comparison with the prompt signal read out with traditional techniques, to improve the detector knowledge and for possible future applications.

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