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## The Surface Resistive Plate Counter

The principle of operation of standard Resistive Plate Counters (RPC), is based on the use of bulk resistivity electrodes (generally made of bakelite or float-glass): the avalanche (or streamer) current pulses, discharging a limited area around its location, are quenched by the local voltage drop on the resistive electrode. The detector recovery time is proportional to the volume resistivity and the electrode thickness: low volume resistivity and thin electrodes, together with the reduction of the gas gain is the standard recipe to increase the detector rate capability.

The novel approach proposed in this contribution is to realize an RPC based on surface resistivity electrodes manufactured with industrial coating techniques (Diamond-Like-Carbon, DLC) on flexible supports, a completely different concept from the one used in traditional RPCs characterized by volume resistivity. The main advantage of such a solution is that the technology allows to realize electrodes with surface resistivity in a very wide resistive range. Results obtained with hybrid prototypes with one electrode with DLC surface resistivity in the range  $10^2$  to  $10^4$  GOhm/square and the second one made of standard float-glass will be presented. Detectors with both electrodes made with DLC film, which seems to require the understanding of photon-feedback as well as field emission effects on DLC surface, will be matter of study in the near future.

### Primary experiment

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