



Contribution ID: 8

Type: **Poster presentation**

Radiation studies on resistive bulk-micromegas chambers at the CERN Gamma Irradiation Facility

Tuesday, 23 May 2017 15:04 (4 minutes)

Two resistive bulk-micromegas chambers were installed in May 2015 at the CERN Gamma Irradiation Facility exposed to an intense gamma irradiation with the aim to study the detector behavior under high irradiation and the long-term aging.

The chambers have an active area of 10 x 10 cm², strip pitch of 400 μ m, amplification gap of 128 μ m and drift gap of 5 mm.

The desired accumulated charge of more than 0.2 C/cm² has been reached for one of the chambers, equivalent to 10 years of HL-LHC operation. The efficiency, amplification, and resolution of the chamber after this long-term irradiation period will be compared with the performance of a non irradiated chamber.

In addition, the latest results of the measured particle rate as a function of the amplification voltage will be presented. These results will be compared with those obtained in October 2015 and presented in the last MPGD conference in 2015.

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Session Classification: Coffee Break and Poster Session - 1