

RPC HADES-TOF wall cosmic ray test performance

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In this work we present results concerning the ground-level cosmic ray test, prior to the final installation and commissioning of the new Resistive Plate Chamber (RPC) Time of Flight (TOF) wall for the High-Acceptance DiElectron Spectrometer (HADES) spectrometer at GSI [1].

The TOF wall is composed of six equal sectors, each one constituted by 187 individual 4-gaps glass-aluminum shielded RPC cells distributed in three columns and two partially overlapping layers, covering an area of 1.26 m². All sectors were tested with the final FEE and DAQ described in [2], [3].

Results confirm a very uniform time response below 85 ps sigma, crosstalk on the few % level and moderate timing tails along with an average longitudinal position resolution better than 10 mm sigma.

[1] D. Belver, et al., The HADES RPC inner TOF Wall, NIMA Vol 602, Issue 3, 1 May 2009, 687-690.

[2] D. Belver, et al., Performances of the front-end for the HADES RPC TOF wall on a C12 beam, NIMA Vol 602, Issue 3, 1 May 2009, 691-695.

[3] A. Gil et al., Journal of instrumentation 2007 JINST 2 T11001, (2007)

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