

SEMINARIO DEL DEPARTAMENTO DE FÍSICA TEÓRICA

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Measurement of the Cosmic Muon Charge Asymmetry in CMS

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Abstract: The CMS experiment at CERN has an ambitious physics program, from the measurement of Standard Model (SM) parameters to the discovery of new physics beyond the SM. In the last few years, detailed studies based on simulated events have established the potential of CMS to successfully cover this physics program. Since 2006, CMS has collected large amounts of data from cosmic ray muons, whose analysis has allowed for commissioning both the CMS detector and the reconstruction and analysis software.

In this talk, I will present the measurement of the ratio of positive- to negative-charge cosmic muons, performed as a function of the muon momentum, using the data collected by CMS. While the analysis of cosmic muons is not part of the physics program of CMS, it provides high quality measurements the probe the capabilities of our detector and reconstruction algorithms.

This is the first measurement of a physical quantity performed by the CMS experiment.