



Contribution ID: 41

Type: **Contributed Talk**

Status of the CMS Silicon Tracker and cosmic test results

Wednesday 21 February 2007 12:20 (20 minutes)

With a total area of more than 200 square meters and about 15,000 silicon modules, the Tracker of the CMS experiment at the Large Hadron Collider will be the largest silicon strip detector ever built. Together with a Pixel detection system the CMS Silicon Strip Tracker will determine the charged particle momenta and will play a determinant role in lepton reconstruction and heavy flavor quark tagging. The Silicon Strip Tracker is at present being integrated and will be completed in spring 2007. In this paper, after a brief overview of the of the CMS Tracking System (Pixel and Strips Systems) we will describe the status of integration, the complex operations and tests that we are carrying out for the final commissioning of the detector. In the presentation results from the integration of the individual sub-detectors (Inner, Outer and Endcap) will be shown. Test results of such large structures will provide clear idea of the excellent system performance that can be achieved after the Tracker is installed and operated in CMS. In addition we will report on the recent CMS Magnet Test Cosmic Challenge (MTCC). Besides the very important commissioning of the Magnet System, this test has provided an ideal opportunity to test the global DAQ readout of a CMS slice under operating conditions, to test installation, operations and maintenance procedures. Approximately 25 million cosmic muon events were collected, of which 10 million events were collected with a magnetic field of up to 4 Tesla. Detailed Tracker performance, detector alignment and tracking studies are now being performed and will be shown.

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Session Classification: Session 5