

Experimental studies towards a DC-DC conversion powering scheme for the CMS silicon strip tracker at SLHC

Wednesday, 23 September 2009 16:15 (25 minutes)

The distribution of power to the CMS tracker upgrade at SLHC is challenging, as the power consumption is expected to be similar as or higher than today, while the operating voltage will decrease and the cables must remain the same.

The CMS tracker has adopted parallel powering with DC-DC conversion as baseline solution to the powering problem.

The current status of the implementation of DC-DC converters into the CMS strip tracker at SLHC phase-2 will be presented. The presentation will include measurements with current tracker structures and custom converter PCBs, studies of the noise coupling and detector susceptibility (e.g. with the Bulk Current Injection method), and simulations of the effect of various powering schemes on the tracker material budget.

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Session Classification: Parallel Session B4 - Power, Grounding and Shielding

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