



Contribution ID: 160

Type: **Poster**

## **Radiation damage to scintillators in the CMS experiment**

*Saturday 6 August 2016 18:00 (2 hours)*

The experiments at the LHC are expected to accumulate up to 300 fb<sup>-1</sup> of data before the major upgrades, known as the “phase II” upgrades, are installed. In this talk, we present studies on the longevity of the active materials used in the barrel and endcap hadronic calorimeters. We present results of in situ measurements of the light output as a function of integrated luminosity and studies of light output as a function of dose using various other sources of irradiation both for the current materials and for potential alternative materials which are less susceptible to radiation damage. We present results on jet resolutions as a function of dose, including schemes to mitigate the impact of the reduced light output, such as increased segmentation of the active material readout.

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**Session Classification:** Poster Session

**Track Classification:** Detector: R&D and Performance