



Contribution ID: 245

Type: **Oral Presentation**

Radiation Damage Studies and Operation of the D0 Luminosity Monitor

Monday 13 June 2011 15:40 (20 minutes)

The D0 Luminosity Monitor (LM) employs scintillating wedges with photomultiplier tube readout to detect particles from inelastic collisions in p-pbar interactions at the Fermilab Tevatron Collider. The LM provides the luminosity measurement used for normalization in D0 physics results. In the course of normal Tevatron operations these scintillators accrue significant radiation damage. Operating parameters are monitored and adjusted to compensate for this degradation, and the scintillators are periodically replaced to facilitate stable performance. Results from radiation damage studies to the scintillator as well as the stability of the luminosity measurement will be presented.

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Session Classification: Machine Det. Interface and Beam Instr.

Track Classification: Machine Detector Interface and Beam Instrumentation