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Longevity and Performance of the CDF Silicon Detector MIGUEL N. MONDRAGON, Fermilab, CDF COLLABORATION — In the last two years the integrated luminosity delivered by the Tevatron Collider at Fermilab increased dramatically from 5 to 10 fb^{-1}. The CDF Run II Silicon Detector has been long exposed to intense radiation exceeding the original detector design endurance of 3 fb^{-1}. It is a major challenge to the detector to keep high operational performance while facing aging effects. Aging effects are a common concern to the community of silicon detectors. Radiation damage effects, including type-inversion of the substrate and increase of the intrinsic noise, are carefully monitored. We present recent results of longevity studies including the evolution of the depletion voltage of sensors, the Signal-to-Noise ratio, and the efficiency as well as a summary of operational experience.

Douglas Glenzinski
Fermilab

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