

Optical Link in the CDF Run II Silicon Tracking System

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The byte-wide optical link in the CDF Run II silicon tracking system has endured a decade of operation and delivered an integrated luminosity of 12 fb⁻¹. The modules consist of a transmitter converting detector signals to optical pulses, connected with 22 m fiber ribbon cables carrying signals to receiver modules out of the detector. The data transmission is conducted with edge-emitting type laser diode arrays at a wavelength of 1550 nm operating at 53 Mbytes/sec. We report on the design feature and reliability in radiation damage that exceed its original design tolerance of up to 200 kRad after 3 fb⁻¹.

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