

Status and Performance of the CDF Run II Silicon Detector

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The CDF Silicon detector is one of the largest operating Silicon detectors in high energy physics. It has 6 m² of Silicon sensors with 722,432 channels read out by 5,456 chips. The Silicon detector allows precision tracking, vertexing and is used in the hardware displaced vertex trigger. This detector played a critical role in the recent B_s mixing result which has been a highlight of the CDF physics programme.

The Silicon detector has been collecting data reliably over the last 4 years. Almost 85% of channels are performing well: they are powered and return good data. The detector operates in the harsh hadron collider environment of the Tevatron. The exposure of a delivered integrated luminosity of 1.5 fb⁻¹ has resulted in observable radiation damage to the silicon sensors. The lifetime of the detector is of particular interest since it will be exposed to an expected integrated luminosity of 4 to 8 fb⁻¹.

There will be a brief review of the detector commissioning and operation. This will be followed by detector performance, radiation damage and future prospects.