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"Beam Spot Finding in Real Time at CDF and Beyond"

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In the CDF experiment at the Tevatron Collider, the 3D position and size of the beam spot is monitored in real time with a precision of order one micron and with a latency of less than one minute. This is necessary for the correct operation of the Silicon Vertex Trigger and is accomplished with a mix of off-the-shelf processors and specialized hardware. Monitoring the 3D position of the luminous region in real time may also be important for machine operation, especially in the early commissioning phases of a new accelerator. In this talk I will describe how this is done in CDF, present some new ideas, and discuss the possible extension of these techniques to the much more demanding environment of the LHC and other future high luminosity machines.

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