

Abstract Submitted
for the APR13 Meeting of
The American Physical Society

Occupancy Study of the Phase 1 Upgrade to the CMS Pixel Sub-detector JAMES ZABEL, Rice University, CMS COLLABORATION — The Phase 1 Upgrade for CMS includes the installation of a new Pixel detector, complete with newly designed readout chips as well as a new geometry. This upgrade is necessary to replace the existing irradiated Pixel detector with one designed for higher instantaneous luminosities. It also provides an opportunity to improve the resolution of track reconstruction and vertex isolation. The new geometry and the higher beam energies available after the upgrade increase the fluence of ionizing radiation traveling through the Pixel detector. Results of simulations that estimate pixel hits, and thus provide an opportunity to estimate data rates and fluence, will be shown. The simulations incorporate a variety of factors affecting the estimated data rates and fluence, including various luminosities, bunch spacings, and beam spot locations.

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Date submitted: 10 Jan 2013

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