Contribution ID: **189** Type: **Poster**

Operation and performance of the CMS tracker

The CMS silicon tracker is the largest silicon detector ever built. It consists of an inner pixel detector, with 66 million read-out channels, and an outer 200 m² silicon strip detector with 10 millions channels. The successful operation of this detector during the first three years of LHC running with proton-proton and heavy ion collisions will be discussed. Results will include operational challenges encountered during data taking that influenced the active fraction and read-out efficiency of the detectors. Details will be given on the performance at high occupancy with respect to local observables, such as signal to noise ratio and hit reconstruction efficiency, and on radiation effects with respect to the evolution of power consumption, sensor bias, read-out thresholds and leakage current.

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Track Classification: Experiments: 2a) Experiments & Upgrades