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CMS Tracker layout studies for HL-LHC

High instantaneous luminosity are expected at the LHC after major upgrades will be performed around 2020. A completely new outer tracker is foreseen for this High Luminosity scenario, which will probably implement also some trigger capabilities.

In order to evaluate the best possible design, a lightweight tool was developed (tkLayout) to generate layouts, make an estimate of the material budget and even provide an a priori estimation of the tracking performance.

tkLayout can be used to optimize a given layout concept, or to compare the performance of different approaches. tkLayout is not specific to CMS, thus it can be used to design upgrades for other experiments.

The technology of tkLayout will be presented in this talk and results for several layout designs will be discussed.

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