



The High Luminosity Large Hadron Collider upgrade and the CMS experiment

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The highest priority development project for both the US and European particle physics communities is the High Luminosity upgrade of the Large Hadron Collider (HL-LHC) and its experiments. It is scheduled to start in 2026 and will increase the luminosity by a factor of 10 from the present LHC. It will enable the precision study of the Higgs Boson and high sensitivity searches for new particles. The preparations for this next phase of the LHC are well underway at the present time. At these event rates there are significant technical challenges for the detectors. I will outline the physics motivations for the upgrade, describe briefly the accelerator upgrade and then in detail the upgrade of the CMS detector necessary to deal with the extremes of the HL-LHC conditions.

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