

## Moving Physics Forward – CMS Pixel Detector Upgrade for HL-HLC

*Thursday, 8 June 2017 18:00 (2 hours)*

To meet the experimental challenges and reach the physics potential of the High Luminosity LHC (HL-LHC), the CMS experiment will be replacing its current pixel detector with new technology and designs. The upgrade plan includes extending the inner pixel detector in the forward region from the current coverage of  $|\eta| < 2.4$  to 4, and adopting small-pitch pixel sensors and next-generation electronic read-out. This presentation reviews the objective and status of the pixel detector upgrade, including mechanical and electronic designs, silicon sensor developments, and performance estimation and design optimization through simulation. Finally, potential physics benefits from the pixel detector upgrade are discussed.

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