

## MTD barrel timing detector at CMS

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The High-Luminosity LHC upgrade will present unprecedented challenges, including intense radiation and up to 200 simultaneous proton collisions. To cope with this, the CMS experiment will deploy a new MIP Timing Detector (MTD) to precisely timestamp MIP particles. This contribution focuses on the MTD's Barrel Timing Layer (BTL), which is now transitioning from a successfully validated design to full-scale construction, highlighting its innovative crystal-based technology and assembly progress.

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