

## ETROC project for the CMS MTD Endcap Timing Layer (ETL)

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The Compact Muon Solenoid (CMS) detector at the CERN Large Hadron Collider (LHC) is undergoing an extensive Phase II upgrade program to prepare for the challenging conditions of the High-Luminosity LHC (HL-LHC). A new timing detector in CMS will measure minimum ionizing particles (MIPs) with a time resolution of  $\sim 30$ -40 ps and hermetic coverage up to a pseudo-rapidity of  $|\eta|=3$ . The Endcap Timing Layer (ETL) will be based on Endcap Timing Readout Chip (ETROC) with a two-disk system of MIP-sensitive LGAD silicon devices. We will review the ETL design and the prototype testing results.

### Are you are a member of the APS Division of Particles and Fields?

No

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