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## **Radiation Hard Zero Degree Calorimeters for ATLAS and CMS in the HL-LHC era**

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Heavy Ion program of the LHC offers great physics opportunities for CMS and ATLAS.

The Zero Degree Calorimeters (ZDC) are increasingly important for characterizing A+A, p+A,  $\gamma$ +A and  $\gamma$ + $\gamma$  collisions at the LHC and EIC.

We present the recent developments in radiation hard fast ZDCs by the ATLAS and CMS heavy ion groups to fully exploit the potential for the QCD physics during the high luminosity era, when the increasing luminosity places a significant strain on the current ZDCs.

We also present the developments of ZDC for the Electron Ion Collider for tagging the spectator neutrons and the identification of forward photons.

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