

Performance of the CMS Electromagnetic Calorimeter and Its Role for the Hunt for the Higgs Boson in the 2 Gamma Channel

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The electromagnetic calorimeter of CMS (ECAL) is a hermetic, fine grained and homogeneous calorimeter containing 75848 lead-tungstate (PbWO₄) crystals, completed by a silicon preshower installed in front of the endcaps. The ECAL sensitivity to decay modes with electromagnetic objects in the final state, such as narrow resonances decaying into two photons, is achieved through its excellent energy and position resolution. The ECAL performance from 2010-2012 is presented in detail and its role in the hunt for the Higgs boson, through the 2-gamma decay mode, is discussed.

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