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## Searching for dark matter at the Compact Muon Solenoid experiment

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In astrophysical observations, the dark matter is a hypothetical matter which constitutes most of the mass in our universe, but its nature remains unknown. Searches for the dark matter can be divided into three categorized. The first method is to search for the scattered dark matter particles off atomic nuclei within a detector, this method is called the direct detection. The second method is to search for secondary particles such as positrons, antiprotons, or gamma-rays which could originate from annihilations of dark matter particles, this method is called the indirect detection. The last method is to search for dark matter created from the particle collisions at the collider.

In this talk, the search for the dark matter at the Large Hadron Collider (LHC) will be presented. The signature has been studied from events containing an energetic jet or photon, and an imbalance in transverse momentum using a data sample of pp collisions at a center-of-mass energy of 7 and 8 TeV. The data has been collected by the Compact Muon Solenoid (CMS) detector at the LHC. Constraints on the dark matter-nucleon scattering cross sections are determined for both spin-independent and spin-dependent interaction models, and compared with results from direct and indirect detections.

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