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Dark matter searches with the CMS detector @LHC

Numerous cosmological observations supporting the remarkable fact that baryonic matter which form stars, galaxies, and clusters consist only 15% of the total matter in the universe and $\sim 85\%$ amount to a non-radiating form of matter (known as dark matter (DM)) that cannot originate from any Standard Model (SM) particle, has made it one of the most interesting topic at the frontier of particle physics today. While the existence of dark matter in the universe is established by a compelling body of experimental evidences, little is known about the nature of dark matter, though a popular candidate for dark matter has been the so-called weakly interacting massive particles. Should it exist in the form of particles, it may be possible to be produced at colliders like LHC as well. The CMS experiment has developed a broad program to search for DM candidates, including searches with mediators which would couple the dark sector to the visible side. In this presentation, some of the latest searches for DM particles with the CMS detector on 13 TeV pp data at LHC will be discussed.

Field of contribution

Experiment

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