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Dark Matter Searches with HAWC

Thursday 27 July 2017 16:00 (15 minutes)

The High Altitude Water Cherenkov (HAWC) gamma-ray observatory is a continuously operated, wide field-of-view (FOV) observatory sensitive to 100 GeV - 100 TeV gamma rays and cosmic rays. HAWC has been making observations since summer 2012 and officially commenced data-taking operations with the full detector in March 2015. With a FOV of 2 steradians, HAWC observes 2/3 of the sky in 24 hours and can be used to search for astrophysical signatures of dark matter (DM) and primordial black holes (PBHs). Within HAWC's field of view there are many dark matter candidate sources for which the upper limits from HAWC are the most sensitive for dark matter of mass > 10 TeV. I will present HAWC's latest results on searches for dark matter signals from dwarf spheroidal galaxies and galaxy clusters, and for evaporating PHBs. HAWC' s measurement of TeV gamma ray emission from the region surrounding nearby pulsars is also relevant to interpretation of the excess of positrons observed at Earth, and I will present our measurements on emission near Geminga and the Monogem pulsars.

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