

Search for TeV decaying dark matter from the Virgo cluster of galaxies

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1 Executive Summary

We search for gamma-ray emission from decaying DM correlated with the direction of galaxies in the Virgo cluster with 1523 days of HAWC data. We also include sub-threshold emission from the M87 galaxy in our model. Finding no significant excess, we set limits on the decay lifetime of the DM for three different channels. For 100 TeV, HAWC results constrain τ upto a few time 10^{27} s which are amongst the strongest constraints in the world for these masses.