

Dark Matter Searches for Monoenergetic Neutrinos Arising from Stopped Meson Decay in the Sun

Thursday 23 June 2016 11:30 (20 minutes)

Dark Matter can be accumulated by the scattering with solar nuclei. In the center of the Sun, Dark Matter annihilations provide detectable signals. Research investigated these signals with two steps; 1. hadronization after annihilation 2. hadronic shower process in the Sun. From the first step, neutrinos are generated and previous works focused on it. However, neutrinos from hadronic shower also can be competitive signals as showers create huge amounts of pions. We improve previous works as consider hadronic shower process containing pion and kaon decays. We apply our results at liquid-scintillation, liquid argon, and water Cherenkov detectors and show competitive sensitivities at few-GeV dark matter masses.

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