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How to search for dark matter neutrino in the laboratory?

abstract:

If the dark matter of the Universe is made of sterile neutrinos with the mass in keV region they can be searched for with the help of X-ray satellites. We discuss the prospects of laboratory experiments that can be competitive and complimentary to Space missions. We argue that the detailed study of beta decays of tritium and other nuclei with the help of Cold Target Recoil Ion Momentum Spectroscopy (COLTRIMS) can potentially enter into interesting parameter range and even supersede the current astronomical bounds on the properties of dark matter sterile neutrino.