

Role of sterile neutrino in particle physics and cosmology

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We study how sterile neutrino with keV mass can be a dark matter candidate by proposing a new mechanism for the production of sterile neutrino in early universe. By estimating the average momentum of the sterile neutrino, we investigate whether sterile neutrinos can be warm dark matter or not. We briefly discuss how sterile neutrinos can be probed indirectly by using X-ray telescopes that can detect the photon line signal produced from radiative decay of the sterile neutrino.

We also discuss the role of sterile neutrino in particle physics and investigate how such a sterile neutrino can be probed in the low energy laboratory experiments as well as at colliders.

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