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## 7 keV sterile neutrino dark matter in U(1)\_R-lepton number model

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I shall discuss about keV sterile neutrino dark matter in a supersymmetric model with U(1)\_R symmetry in the light of a recent observation of an X-ray line signal at around 3.5 keV, detected in the X-ray spectra of Andromeda galaxy and various galaxy clusters including the Perseus galaxy cluster. In this model the U(1)\_R symmetry is identified with lepton number. The model provides a small tree level mass to one of the active neutrinos and also renders a suitable warm dark matter candidate in the form of a sterile neutrino. Light neutrino masses and mixing can be explained once one-loop radiative corrections are taken into account. The scalar sector of this model can accommodate a Higgs boson with a mass of  $\sim$  125 GeV. In this model gravitino is the lightest supersymmetric particle and we also discuss the cosmological implications of this light gravitino with a mass of order GeV.

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