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## Large lepton asymmetry from Affleck-Dine leptogenesis and sterile neutrinos as dark matter

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“Shi-Fuller mechanism” is known as one of the scenarios which can explain all dark matter by sterile neutrinos not conflicting with any other current observational constraints. We revisit the numerical calculation of final energy spectrum of sterile neutrinos for given initial lepton asymmetry in Shi-Fuller mechanism by properly incorporating the effects of neutrino oscillation in active sector and effects of time evolution of lepton asymmetry during the production of sterile neutrinos. Then we comprehensively discuss the constraint on this scenario from current X-ray observations. Also, Shi-Fuller mechanism needs significant lepton asymmetry in the early universe compared to observed baryon asymmetry. We discuss the generation of such lepton asymmetry by Affleck-Dine mechanism.

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