Right-handed neutrinos in the $\nu$ MSM

Kazuhiro Takeda (Niigata Univ.)

Abstract

We consider the $\nu$ MSM (Neutrino minimal standard model) to explain neutrino masses, dark matter and baryon number asymmetry. In this framework, the lightest heavy neutrino $N_1$ is dark matter candidate and the others $N_2$ and $N_3$ explain neutrino masses and baryon asymmetry.

$N_1$ behave as warm dark matter and receives the stringent constraint from the structure formation of the universe. The constraint is modified by the entropy production caused by the $N_{2,3}$ decay. We evaluate the entropy production quantitatively and consider the impact on dark matter.