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Probing sterile neutrinos in meson decays

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We consider the nuMSM, which is the minimal standard model extended by three right handed neutrinos with masses lighter than the weak scale. In this model, the lightest right-handed neutrino N_1 is dark matter of the universe and the other two N_2 and N_3 are responsible to the neutrino masses in oscillation experiments and baryon asymmetry of the universe. In this talk, we would like to explain how to search N_2 and N_3 in decays of pions and kaons. Especially, we consider the case when their masses are lighter than the pion mass, and show the parameter range allowed from the various constraints by experiments and cosmology. We also present the implications to the future search experiments in pion and kaon decays.

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