

Within the standard propagation scenario, the flavor ratios of high-energy cosmic neutrinos at neutrino telescopes are expected to be around the democratic benchmark resulting from hadronic sources, $(1:1:1)_{\oplus}$. We show how the coupling of neutrinos to an ultralight dark matter complex scalar field would induce an effective neutrino mass that could lead to adiabatic neutrino propagation. This would result in the preservation at the detector of the production flavor composition of neutrinos at sources. This effect could lead to flavor ratios at detectors well outside the range predicted by the standard scenario of averaged oscillations. We also present an electroweak-invariant model that would lead to the required effective interaction between neutrinos and dark matter.