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# Flavor-changing Majoron interactions with leptons

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When the Standard Model Higgs sector is extended with a complex singlet that breaks global lepton number symmetry spontaneously, a massless Goldstone boson called the Majoron $J$ arises. In addition to increasing Higgs invisible decay through mixing, the Majoron can generally have flavor-changing interactions with fermions. We use the type-III seesaw mechanism to demonstrate the existence of such couplings with both charged leptons and neutrinos. This opens up new channels to search for the Majoron. We use the experimental data such as muonium-anti-muonium oscillation and flavor-changing neutrino and charged lepton decays to put constraints on the couplings. Besides, we propose a polarization asymmetry of flavor-changing $\ell \to \ell' J$ decays that can reveal the chiral information of the interactions.

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