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Majoron contribution to the invisible Higgs decays

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Nowadays, neutrino oscillations and Higgs boson existence has been confirmed. On the other hand, the possibility of extended scalars sectors as well neutrino mass origin are broad areas of research. Majoron minimal model consider both topics, which adds a complex singlet to Standard Model, $\sigma=(f+\sigma^0+iJ)/\sqrt{2}$ that carries a B-L charge 2. The pseudoscalar majoron J,f being the expectation value of σ , and σ^0 as the heavy CP-even majoron partner, are the new physics particles. In addition, three right-handed neutrinos are added, then, the Dirac and majorana neutrino mass term are allowed thanks to Higgs doublet and complex singlet, respectively. We are interested on the invisible Higgs decays probability to majorons and its posible detection in LHC.

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