

Majoron Dark Matter from Type II Seesaw

The Type II seesaw mechanism is among the simplest extensions of the Standard Model accounting for neutrino masses. These are naturally induced by the vacuum expectation value (vev) of a scalar triplet coupling to the Standard Model Higgs and lepton doublets. In this talk, I will show that the “type-II majoron” - the pseudo Nambu-Goldstone boson that arises in this context if the lepton number is spontaneously broken by the vev of an additional scalar singlet - can naturally account for the dark matter (DM) observed in the universe. I will discuss majoron production in the early universe through both the freeze-in and misalignment mechanism and its signatures and constraints at direct and indirect DM searches.

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