

Dark photons in a Higgs Stueckelberg model for dark matter

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An extension of the Standard Model (SM) is studied, in which two new vector bosons are introduced, a first boson (Z') coupled to the SM by the usual minimal coupling, producing an enlarged gauge sector in the SM and a second boson field, in the dark sector of the model, remains massless and originates a dark photon, in a hybrid mixing scenario based on a combined Higgs and Stueckelberg mechanisms. An astrophysical application is evaluated obtaining an estimate of the impact on stellar cooling of white dwarfs.

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