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An Inert Scalar In The S3 Symmetric Model

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We consider the S3 symmetric extension of the Standard Model in which all the irreducible representations of the permutation group are occupied by SU(2) scalar doublets, one of which is taken as inert. We study the parameter space of the model probing points against physical constraints ranging from unitarity tests to experimental Higgs searches limits. We find that the latter constraints severely restrict the parameter space of the model, and that the relic density of the dark matter candidates lies below the Planck bound for a large portion of the probed regions.

Content of the contribution

Theory

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