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Effective Models for Scalar Dark Matter with Z_{2n} symmetries

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We present single and multi-component scalar dark matter scenarios explored via effective operators up to order 6. For this, we utilize the mathematica code Sym2Int and generate the relevant operators of the Lagrangian up to the desired energy dimension. The operators are used as interaction inputs for the mathematica package FeynRules to produce the model files necessary for the calculations of dark matter observables with the code micrOmegas. Initially we consider the prospect of generating the observed dark matter density for a single real or complex particle connected to the standard model through effective operators. Later we consider a two-component scenario where the complex and real dark matter fields are connected through operators introduced by some particular Z_{2n} symmetry.

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