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Unification and Dark Matter in a Minimal Scalar Extension of the Standard Model

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The six Higgs doublet model is a minimal extension of the Standard Model (SM) that addresses dark matter and
gauge coupling unification. Another Higgs doublet in the 5 representation of a discrete symmetry group, such as
S_6, is added to the SM. The lightest components of the 5-Higgs are neutral, stable and serve as dark matter so
long as the discrete symmetry is not broken. Direct and indirect detection signals, as well as collider signatures are
discussed. The five-fold multiplicity of the dark matter decreases its mass and typically helps make the dark matter more visible in upcoming experiments.

Author: Ms LISANTI, Mariangela (SLAC, Stanford University)

Co-author: Prof. WACKER, Jay (SLAC, Stanford University)

Presenter: Ms LISANTI, Mariangela (SLAC, Stanford University)

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