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Minimal but non-minimal inflation and electroweak symmetry breaking

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We consider the most minimal scale invariant extension of the standard model that allows for successful radiative electroweak symmetry breaking and inflation. The framework involves an extra scalar singlet, that plays the role of the inflaton, and is compatible with current experimental bounds owing to the non-minimal coupling of the latter to gravity.

This inflationary scenario predicts a very low tensor-to-scalar ratio $r \approx 10^{-3}$, typical of Higgs-inflation models, but in contrast yields a scalar spectral index $n_s \simeq 0.97$ which departs from the Starobinsky limit. We briefly discuss the collider phenomenology of the framework.

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