

We consider a complex singlet scalar in the spectral action approach to the standard model. It is shown that there is a range of initial values at the unification scale which is able to produce Higgs and top quark masses at low energies. The stability of the vacuum and the deviation of gauge couplings from experimental values are discussed and compared at the two-loop level with a real scalar singlet and the pure standard model.

Reference: <https://arxiv.org/abs/1705.01605>