

Sneutrino-Higgs Inflation in Heterotic M-Theory

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A vacuum state of heterotic M-theory leads to a specific N=1 supersymmetric theory which, below the unification scale, has precisely the spectrum of the MSSM with three right-handed neutrino chiral multiplets, one for each family, with physically acceptable spontaneously broken R-parity. It is shown that a linear combinations of the third family right-handed sneutrino with the up neutral Higgs scalar has a specific potential energy that, for high scale supersymmetry breaking of order 10^{13} GeV, leads to an acceptable region of cosmic inflation, which satisfies all the Planck2015 data. The complete theory of perturbative reheating of this inflaton into standard model particles is presented and shown to attain thermal equilibrium prior to the breaking of R-parity. This theory has several novel candidates for dark matter, which will be discussed. Roland, I hope this is acceptable for you and that I can present it as a plenary talk at your conference. Please confirm. In the meantime, I will use the new website you sent me to register for the conference. If I have any more trouble with it, I'll let you know.