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Higgs-Dilaton inflation in Einstein-Cartan gravity

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We study the phenomenology of the Higgs-Dilaton model in the context of Einstein-Cartan gravity, focusing on the separate impact of the Holst and Nieh-Yan terms on the inflationary observables. Using analytical and numerical techniques, we show the predictions of these scenarios to display an attractor-like behavior intrinsically related to the curvature of the field-space manifold in the metric formulation of the theory. Beyond that, the analysis of the Nieh-Yan case reveals the existence of an additional attractor solution induced by a cubic pole in the inflaton kinetic term that becomes relevant at large dilaton couplings. This constitutes a unique feature of the Einstein-Cartan formulation as compared to the metric and Palatini counterparts.

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