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The entropic quasi-de Sitter instability time from the distance conjecture. (English)

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Summary: From the entropy argument for the dS swampland conjecture which connects the Gibbons-Hawking entropy bound with the distance conjecture, we find the entropic quasi-dS instability time given by $1/(\sqrt{\epsilon_H}H) \log(m_{\text{Pl}}/H)$ as the lifetime of quasi-dS spacetime. It depends on the slow-roll parameter, and contains the logarithmic factor $\log(m_{\text{Pl}}/H)$ which can be found in the scrambling (or decoherence) time as well. Such a logarithmic factor enhances the geodesic distance of the modulus from the mere Planck scale, and also possibly relaxes the bound on $m_{\text{Pl}}^2 \nabla^2 V/V$.

MSC:

83C15 Exact solutions to problems in general relativity and gravitational theory

Cited in **3** Documents

76E20 Stability and instability of geophysical and astrophysical flows

28D20 Entropy and other invariants

Full Text: [DOI](#) [arXiv](#)

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