
Современная математическая физика

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**Non-singular de Sitter cosmology from
non-supersymmetric AdS instability conjecture**

The non-supersymmetric AdS instability conjecture can point to how quantum gravity removes the initial Big Bang singularity, leading to a potential resolution for the past-incomplete inflationary universe. The evolution of the universe is realized as the nucleation of a thin-wall bubble mediating the decay of the non-supersymmetric AdS vacuum. The critical temperature and the critical scale factor for the existence of the universe are all finite and can be determined in terms of the parameters specifying the stringy 10D AdS vacuum solutions. The critical temperature and the critical scale factor can be predicted via the inflationary observations. The tiny cosmological constant governing the accelerating expansion of the universe at the late time can be realized by the Gauss-Bonnet correction.