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Dynamical Tunnelling-Induced Cosmological Bounce

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I will present the results of arXiv:2301.02455 and arXiv:2301.08652 where it is shown that, for sufficiently low temperatures, a scalar field tunneling between two degenerate vacua on a flat FLRW background metric results in Null Energy Condition violation in the true vacuum state. The corresponding homogeneous fluid induces a cosmological bounce, after which it obtains a phantom-like equation of state and asymptotically induces De Sitter. The present mechanism is constructed without the need for exotic matter or modified gravity.

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