

General Relativity and Quantum Cosmology

Why Does the Universe Expand ?

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The purpose of the paper is five-fold: (a) Argue that the question in the title can be presented in a meaningful manner and that it requires an answer. (b) Discuss the conventional answers and explain why they are unsatisfactory. (c) Suggest that a key ingredient in the answer could be the instability arising due to the 'wrong' sign in the Hilbert action for the kinetic energy term corresponding to expansion factor. (d) Describe how this idea connects up with another peculiar feature of our universe, viz. it spontaneously became more and more classical in the course of evolution. (e) Provide a speculative but plausible scenario, based on the thermodynamic perspective of gravity, in which one has the hope for relating the thermodynamic and cosmological arrows of time.

Comments: revtex; 5 pages; no figures

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