

The 10 m² muon hodoscope made of drift tubes with length 3.7 m and diameter 52 mm is under development and construction in NRC “Kurchatov institute” – IHEP. Totally 768 drift tubes are grouped into 6 identical multilayers, each consisting of two tube layers with parallelly placed tubes. Tube orientation in the adjacent multilayers is orthogonal, thus the hodoscope has six X and six Y tube layers. Detailed mechanical structure, on-chamber electronics and data acquisition systems are described. Expected technical characteristics and some test results are presented.

Cosmological constant due to quantum corrections to the effective potential

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In this work, we show that quantum corrections to some cosmological models[1] can lead to a significant modification of the behaviour of the initial potential and the appearance of a non-zero ground state energy of the Universe which

[1]D. I. Kazakov, R. M. Iakhibbaev, and D. M. Tolkachev. “Leading all-loop quantum contribution to the effective potential in the inflationary cosmology”. In: *JCAP* 09 (2023), p. 049. DOI: [10.1088/1475-7516/2023/09/049](https://doi.org/10.1088/1475-7516/2023/09/049). arXiv: [2308.03872](https://arxiv.org/abs/2308.03872) [hep-th].

[2]Renata Kallosh, Andrei Linde, and Diederik Roest. “Superconformal Inflationary α -Attractors”. In: *JHEP* 11 (2013), p. 198. DOI: [10.1007/JHEP11\(2013\)198](https://doi.org/10.1007/JHEP11(2013)198). arXiv: [1311.0472](https://arxiv.org/abs/1311.0472) [hep-th].

can be interpreted as a cosmological constant. We apply the formalism of the effective potential to the simplest forms of α -attractors which can be represented by the so-called T -models and E -models[2]. We derived the generalised renormalisation group (RG) equations that sum up the whole sequence of leading logarithmic contributions to the effective potential. As a result, the accounting of quantum corrections leads to a change of character and a lift of the effective potential[3],[4]. We interpreted this uplift as the appearance of the cosmological constant Λ for the T^2 and E^2 models. Thus, we have found out that the cosmological constant Λ may exist as a consequence of quantum corrections to the effective potential with some value of the scale transmutation parameter μ even in non-renormalizable models of inflation. And the value of the cosmological constant Λ allows one to fix the parameter μ which is a free parameter in the non-renormalizable theory.
