Quantum corrections to cosmological potentials and the origin of the cosmological constant

D. I. Kazakov

Bogoliubov Laboratory of Theoretical Physics, JINR, Dubna, Russia

We demonstrate how one can calculate the leading quantum corrections to arbitrary scalar

potentials even in non-renormalizable theories. We derive the generalised RG equation for the effective potential which takes into account all the leading terms in all orders of perturbation theory, just like it takes place in renormalizable case. Application of this formalism to the co-called alpha-attractors in inflationary cosmology leads to increase of the potential at the minimum which can be interpreted as appearance of the cosmological constant due to quantum corrections. Choosing the set of parameters dictated by inflation scenario one can get the value of the cosmological constant satisfying the modern data.

Presenter: D. I. Kazakov