

Cosmological Constant

Zygmunt Morawski

Abstract: Once more the problem of the cosmological constant has been touched.

The roton is complex if its energy. It is necessary in the Einstein equation to take under consideration the cosmological constant, which is responsible for the superconducting and superfluiding effects of the unempty vacuum (the right term of the London equation).

We have:

$$R_{ik} + g_{ik} g^{ik} R_{ik} + g_{ik} \Lambda = \alpha T$$

(Einstein's equation)

$$\Delta H = \beta H$$

(London's equation)

The massless Goldstone's bosons ($m_0 = 0$) conjugate with the massless Ashtekar's ($M_0 = 0$) loops. This conjugation gives the Goldstone's boson the mass (in other words we have the spontaneous symmetry breaking).

The massless Ashtekar's loops correspond with the superconductivity, because in both cases there are not a determined number of states. This number is washed away in both these situations.

In the Dirac – Einstein equation the term both with the cosmological constant must appear too.