

Peer Review

Review of: "Fermionic Casimir Effect at Finite Temperature in Hořava–Lifshitz Theories"

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Studies of the Casimir effect occupy a very important place in modern physics, since, being a highly nontrivial consequence of quantum field theory, they admit a relatively simple experimental verification. The Casimir effect for different fields within various theories and with diverse boundary conditions has been studied theoretically and experimentally in thousands of papers.

In this paper, the Casimir effect is studied for Horava–Lifshitz-like (HL-like) theories, characterized by strong Lorentz symmetry breaking (space-time asymmetry), and characterized by a so-called critical exponent – a parameter ξ (usually natural), so that at $\xi=1$, the usual Lorentz-invariant case is recovered. The case of the HL-like generalization of the Dirac Lagrangian is studied, and to evaluate the Casimir energy, the zeta function regularization is employed. While in the previous paper [15], the zero temperature case is considered, in this paper the finite temperature generalization is carried out. Explicitly, the Casimir energy is found using the MIT bags boundary condition, both for odd and even values of the critical exponent.

Certainly, this is a very good paper with interesting and relevant results, so, in my opinion, it can be published.

Declarations

Potential competing interests: No potential competing interests to declare.