

Casimir Force and the Universe

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What drives the acceleration of the Universe expansion? Dark energy, of course, but what is it? The possibility that it could be the result of a sort of Casimir effect at the cosmological level is not yet discarded. One of the main technical problems in tackling down this issue is the regularization procedure and corresponding renormalization. Beautiful but rather non-trivial mathematics, involving the zeta function of pseudodifferential operators, are key in this respect. We will summarize the state of the art in this and related subjects.