# Casimir forces out of equilibrium

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We analyze both the attractive and repulsive Casimir-Lifshitz forces recently reported in experimental investigations. By using a kinetic approach, we obtain the Casimir forces from the power absorbed by the materials. To this purpose, we consider collective material excitations through a set of relaxation times distributed in frequency according to a log-normal distribution. A generalized expression for these forces for arbitrary values of temperature is obtained [1]. We compare our results with experimental measurements and conclude that the model proposed gives better results than the proximity-force approximation.

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[1]  L. C. Lapas, A. Pérez-Madrid, and J. Miguel Rubi, Phys. Rev. Lett., **116**, 110601 (2016).