

COLOQUIO DEL DEPARTAMENTO DE FÍSICA TEÓRICA

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The Casimir Effect: Dynamical Manifestations of the Quantum Vacuum

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Abstract: Over sixty years ago, Hendrik Casimir predicted the existence of a force between grounded conducting plates due to their effect on the vacuum fluctuations of the electromagnetic field. Casimir's force depends only on Planck's constant, the speed of light, and the distance between the plates. Recently, new experimental methods have confirmed Casimir's prediction with great precision. The "Casimir Effect" has been interpreted as direct evidence for quantum effects in the vacuum and applied to everything: from micro-machinery to the cosmological constant.

I will review the origins and critique the interpretation of the Casimir Effect, and review the stunning experimental progress of recent years. Until recently Casimir forces had not been computed for any geometry beyond parallel plates. Finally I will describe work done over the past few years by our group at MIT: We have developed powerful new methods for computing the geometry dependence of Casimir forces, and opened the door to a universal description of forces due to vacuum fluctuations.

Más información: <http://www.ft.uam.es/docencia/seminarios.html>