

Abstract Submitted
for the MAR09 Meeting of
The American Physical Society

Universal formulation of Casimir forces for static objects with arbitrary shapes and susceptibilities SAHAND RAHI, MIT, T. EMIG, N. GRAHAM, R. L. JAFFE, M. KARDAR COLLABORATION — We have derived a general formula for the Casimir energy of any number of objects with arbitrary but linear electric permittivities and magnetic permeabilities. The formula is more general than existing ones since it applies to more than two objects and allows arbitrary shapes. It even allows for objects to be inside of one another and thus enables the study of the Casimir force between one object and a cavity. It requires as input the T-matrix of each individual object. The formula is applied to the geometry of two infinite cylinders, two cylinders opposite one or two metallic plates, and a dielectric sphere and dielectric plate.

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Date submitted: 28 Nov 2008

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