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Distance dependence of contact potential in cylindrical-plane Casimir force measurements QUN WEI, KEVIN MILLER, Dartmouth College, DIEGO DALVIT, Los Alamos, ROBERTO ONOFRIO, Dartmouth College — We report on the status of an experiment aimed at measuring the Casimir force in cylinder-plane geometry. In order to characterize the apparatus, we have first performed small distance electrostatic calibrations. This has allowed us to better identify various general issues on the measurement of the Casimir force, such as the distance dependence of the contact potential, and the delicate assessment of the absolute distance. The determination at all distances of the contact potential V_0 is particularly crucial since its distance dependence can affect the entire data analysis procedure. We also carried on the measurements of V_0 in sphere-plane and plane-plane geometries for comparison.

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