

Abstract Submitted
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Observation of the skin-depth effect on the Casimir force between metallic surfaces MARIANGELA LISANTI, Harvard University, Department of Physics, DAVIDE IANNUZZI, Harvard University, Division of Engineering and Applied Sciences, FEDERICO CAPASSO, Harvard University, Division of Engineering and Applied Sciences — We have measured the attractive Casimir force between a metallic plate and a transparent sphere covered with a palladium thin film. When the thickness of the coating is less than the skin-depth of the electromagnetic modes that mostly contribute to the interaction, the force is significantly smaller than that measured with a thick bulk-like film. Our results are in agreement with theoretical predictions and are the first direct evidence of the skin-depth effect on the Casimir force between metallic surfaces.

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