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Path integral methods for the QED Casimir effect

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Using path integral methods, we study the Casimir effect for the case of two infinite parallel plates in the QED vacuum, with perfect electromagnetic boundary conditions applied on both plates. We enforce these boundary conditions by adding Lagrange multiplier fields to the action. We then recover the known Casimir energy in two different ways: once by extracting the vacuum energy from the path integral Z, and once by calculating the vacuum energy as the expectation value of the energy momentum tensor's 00 component.