

Abstract Submitted
for the TSF16 Meeting of
The American Physical Society

Lorentz Invariance of the Casimir Effect DANIEL FARNSWORTH,
JEAN-FRANCOIS VAN HUELE, Brigham Young University — The Casimir
Effect—most simply realized as an attractive force between two parallel, neutral,
conductive plates—is usually derived from quantized electromagnetic potentials in
the Coulomb gauge, which is not Lorentz invariant. We seek a Lorentz-invariant
derivation of the Casimir effect, using the Gupta-Bleuler method for quantizing
the field and finding equations of motion for the parallel plates. We compare this
approach with the motion obtained in the stationary frame.

Daniel Farnsworth
Brigham Young University

Date submitted: 21 Sep 2016

Electronic form version 1.4