

Zero-point Forces in Electronic Circuits: Alternative Route to Measuring Casimir Phenomena?

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Electric components inside circuits are connected via transmission lines. Zero-point fluctuations associated with these components travel between the components and give rise to an interaction potential. We show how such potentials can give rise to forces both on the internal and external degrees of freedom of the components. Considering recent progress in the coupling of circuit QED systems with mechanical oscillators, our results suggest an alternative route to measuring novel Casimir phenomena.