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Towards Simulating Relativistic Quantum Field Theory in Circuit QED

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The recent observation of the Dynamical Casimir Effect (DCE) was possible due to the fast modulation of the boundary using circuit QED. In this work, I investigate the DCE where the boundary follows different relativistic oscillatory motions. I obtain the relation between the effective temperature of the radiation and the acceleration of the boundary, showing that it yields an effective Unruh type of temperature. This offers the prospect of using the DCE to simulate effects from relativistic quantum field theory.

Author: Ms CORONA UGALDE, Paulina (University of Waterloo-IQC)

Co-authors: Dr MARTIN-MARTINEZ, Eduardo (Institute for Quantum Computing (University of Waterloo) and Perimeter Institute for Theoretical Physics); MANN, Robert (University of Waterloo)

Presenter: Ms CORONA UGALDE, Paulina (University of Waterloo-IQC)

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