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**Michael A Bishop\*** (mibishop@csufresno.edu) and **Gerardo Munoz**. *An Operator Algebraic Approach to the Unruh Effect*. Preliminary report.

The Unruh effect is an unusual physical phenomenon where an observer in a relativistic frame measures different temperatures than an observer in an inertial frame. This violates the fundamental physical principle that intrinsic properties of a system should be observer independent (or at least accounted for in some reasonable manner). Physics literature studies this idea through the lens of unbounded operators on Hilbert spaces. We present the Unruh effect through an algebraic approach which carefully handles issues with unbounded operators to show that this thermal effect is well-defined and demonstrate that the discrepancies between observers is due to their time evolution and space of states. (Received March 02, 2020)