

IQSE AMO QO Seminar Series

Tuesday, February 8th, 11:30 am ZOOM & IQSE
seminar room (MPHY 578)

Pizza will be served for IQSE members at 11:00 am. The talk will start around 11:30 am

Stephen A. Fulling

IQSE; Mathematics, Physics & Astronomy, Texas A&M University

Status of the Equivalence Principle for Uniform Acceleration Radiation

EVENT DETAILS: We all agree that (1) a stationary charge does not radiate, as seen by a stationary observer. Most experts now agree that (2) a uniformly accelerated charge does emit (classical) radiation to a stationary observer, and (3) the accelerated charge does not radiate from the point of view of a coaccelerated observer (one following another orbit of the same Rindler Killing vector). Most controversial is (4) a stationary charge radiates from the point of view of a uniformly accelerated observer. Many physicists pronounce (4) to be manifestly absurd. In defense of (4) one can argue that (a) it appears to be required by symmetry (a "qualitative equivalence principle"), and (b) it is a classical analog of Unruh-like radiation from an atom in free fall into a black hole (Scully et al., PNAS 2018).

On behalf of my student Luther Rinehart I will present an argument that (4) is correct if "radiation" is defined as a nonzero integrated outward flux of the field energy defined in the Rindler coordinate system (the "boost energy").

ZOOM information:

<https://tamu.zoom.us/j/98156251523?pwd=QVdSdGxtL1UyY0g1L083SU5QR0QrUT09>

Meeting ID: 981 5625 1523

Passcode: 297578

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