Avenues of Quantum Field Theory in Curved Spacetime



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Thermal field theory with acceleration, entropy current and Unruh effect

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We evaluate the thermal expectation values in a free quantum field theory at global thermodynamic equilibrium with acceleration in Minkowski space- time. It is found that Unruh temperature $TU = A/2\pi$ is an absolute lower bound for the comoving temperature along the hyperbolic flow lines. We also present a method to determine the entropy current, and we find that at the Unruh temperature the integral of the entropy current yields the en- tanglement entropy of the right Rindler wedge in the Minkowski vacuum state.

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