ICTP SAIFR | International Centre for Theoretical Physics South American Institute for Fundamental Research

INSTITUTO PRINCIPIA

THERMALITY IN QUANTUM FIELD THEORY IN CURVED SPACETIMES

August 3 – 7, 2026

at Principia Institute, São Paulo, Brazil

CONFIRMED SPEAKERS

Horacio Casini (Centro Atómico Bariloche, Argentina)
Claudio Dappiaggi (U. Pavia, Italy)
Paul C. W. Davies (Arizona State U., USA)
Stephen A. Fulling (Texas A&M U., USA)
Eduardo Martín-Martínez (Perimeter I. and Waterloo U., Canada)
George E. A. Matsas (UNESP, Brazil)
Maurício Richartz (UFABC, Brazil)
William G. Unruh (U. British Columbia, Canada)
Robert M. Wald (U. Chicago, USA)

The Fulling–Davies–Unruh effect is one of the most paradigmatic predictions of quantum field theory in curved spacetimes. It states that while an inertial observer might freeze in the Minkowski vacuum, an accelerated observer might find themselves burning up in the same quantum state. Not only does this effect challenge our usual notion of the "particle" as a central object in fundamental physics, but it also points toward the possibility of deeper connections between quantum theory, thermodynamics, and spacetime.

2026 marks the fiftieth anniversary of Unruh's seminal paper on acceleration-induced thermality. Over the last five decades, many developments have advanced the understanding of thermality in quantum field theory in curved spacetimes. It is thus with great joy that we join this August to celebrate fifty years of achievements.

In a bold attempt to address fifty years of progress in five days, we will discuss topics including the Fulling–Davies–Unruh effect and related predictions, entropy and entanglement in QFT, applications of Tomita–Takesaki modular theory, experimental prospects for measuring thermality, and much more.

Registration deadline: June 12, 2026

Online application and more information:
ictp-saifr.org/tqftcs2026

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