



Universidad
del País Vasco

Euskal Herriko
Unibertsitatea

EHU QC

EHU Quantum Center

Theoretical Physics Seminar Series

The correspondence principle between rotating black holes and fundamental strings

Marija Tomašević

University of Amsterdam, The Netherlands

Abstract: The correspondence principle between strings and black holes is a general framework for matching black holes and massive states of fundamental strings at a point where their physical properties (such as mass, entropy and temperature) smoothly agree with each other. This correspondence becomes puzzling when attempting to include rotation: At large enough spins, there exist degenerate string states that seemingly cannot be matched to any black hole. Conversely, there exist black holes with arbitrarily large spins that cannot correspond to any single-string state. We discuss in detail the properties of both types of objects and find that a correspondence that resolves the puzzles is possible by adding dynamical features and non-stationary configurations to the picture. Our scheme incorporates all black hole and string phases as part of the correspondence, save for one outlier which remains enigmatic: the near-extremal Kerr black hole. Along the way, we elaborate on general aspects of the correspondence that have not been emphasized before.

Prof. A. Chamorro Seminar Room, Theoretical Physics Seminar Room

Wednesday, May 22nd, 2024

Time: 11:40 pm