Contribution ID: **19** Type: **not specified**

Christoph Minz: A scheme to bound relative modular Hamiltonians in QFT

Saturday, May 9, 2026 9:35 AM (30 minutes)

Relative modular Hamiltonians are operators in quantum field theory to compute relative entropy, relating to a key concept in quantum information theory. Since explicit expression for these operators are known to be very difficult to find, we describe a scheme to estimate relative modular Hamiltonians between two states, both related to a reference state (like the vacuum) for which the modular Hamiltonian might be known or at least better understood. So we can formulate upper and lower bounds of relative modular Hamiltonians by choosing pairs of states for larger and smaller regions, respectively. In this talk, I will summarize the scheme, emphasize that those states and regions available to our scheme do not signal superluminally (in the sense of Sorkin's paradox), and show how to evaluate the quality of the estimates with some explicit computations. This is joined work with Ko Sanders and Adriano Chialastri.