

SEMINAR: The ubiquitous cost of time

GUILLERMO EZEQUIEL PERNA

June 04, 2026

12:00 to 13:00

Seminar Room

When implementing a driving protocol in a quantum system to achieve a target state, time is an external parameter. If we insist on a unitary description from first principles, time must be provided by a quantum clock. In this setup, even in the absence of an environment, we demonstrate that timekeeping induces a loss of purity and fidelity and incurs an energetic cost in the target state. There's a trade-off among energetic investment, precision, and irreversibility that we quantify using a thermodynamic uncertainty relation.

The author will also be presenting the quantum community from Buenos Aires

Hosted by: Prof. Dr. Antonio Acín