



Contribution ID: 263

Type: **Talk**

Infinitesimal limit of teleportation

Wednesday 25 June 2025 18:00 (15 minutes)

We model relativistic equations of motion, i.e. the physics of first quantization, using a port-based teleportation protocol. The entanglement resource is found in a quantum field's vacuum, and the measurement needed for a teleportation protocol is found in the interaction between a piece of matter and the vacuum of a quantum field. In this way, we find an interesting mapping between second-quantized physics, and first quantized physics, pointing at an information-theoretic interpretation of the Planck constant as measuring the amount of entanglement in a quantum field's vacuum. We will compare this result with results in holographic, AdS/CFT toy models.

Author: SODA, Barbara (Perimeter Institute)

Presenter: SODA, Barbara (Perimeter Institute)

Session Classification: Wednesday Parallel Session C