



Contribution ID: 232

Type: **Talk**

Relativistic implications of entropy and purity

Friday 27 June 2025 14:40 (15 minutes)

A quantum object in free fall is extended by virtue of quantum uncertainty, and therefore experiences tidal forces and other relativistic effects. As a result, entropy and purity affect geodesic motion and acquire weight, an observation that has broad implications from free-fall experiments to Hawking radiation. If the object's position is correlated in at least two directions, a complete description of its geodesic motion requires non-Riemannian geometry of a form controlled by the entropy and purity of its state.

Author: BOJOWALD, Martin (The Pennsylvania State University)

Presenter: BOJOWALD, Martin (The Pennsylvania State University)

Session Classification: Friday Parallel Session F