

Time Dilation in Planck-scale-deformed Special Relativity

Wednesday 9 July 2025 12:20 (20 minutes)

I will show how to derive finite boost transformations within the theory of Deformed Special Relativity based on the bicrossproduct-basis κ -Poincaré Hopf algebra.

This enables to establish key properties of the theory, such as worldline covariance and the spacetime metric. These results allow the derivation of a Planck-scale-modified time dilation factor, which may be relevant for quantum gravity phenomenology, particularly in the context of lifetime observations.

Working Group

WG1 - High Energy QG Theory

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Session Classification: WG1 High Energy QG Theory 3