



Contribution ID: 107

Type: **Talk in the parallel session**

Nonsymmetric metric tensor as an approach to quantum gravity

Tuesday, July 6, 2021 11:15 AM (25 minutes)

We argue that the minimal length uncertainty emerging from the generalized uncertainty principle, in which the gravitational impacts on the noncommutative space are thoughtfully taken into account, modifies the whole spacetime geometry. The resulting spacetime metric tensor consists of the symmetric GR compatible metric tensor $g_{\mu\nu}$ and another term comprising $g_{\mu\nu}$ multiplied by $\beta_0(\ell_p/\hbar)^2$ squared. Towards approaching quantized spacetime geometry, we analyze the line element and discuss on the resulting geodesic, which encompasses acceleration, jerk, and snap (jounce) of a test particle in discretized gravitational field.

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Session Classification: Quantum Gravity Phenomenology

Track Classification: Quantum Gravity: Quantum Gravity Phenomenology