

Theory: Hawking Radiation without Lorentz Invariance

Thursday, September 7, 2023 4:15 PM (15 minutes)

It's a well-known fact that Lorentz Violating (LV) theories of gravity, such as Horava-Lifshitz gravity, highlight possibility of a renormalizable, non-Lorentz-invariant UV completion of General Relativity (GR).

On the phenomenological side, the breaking of Local Lorentz Invariance gives a different notion of causality, for which the LV-Black Hole solutions assume a different internal structure with respect to GR.

Surprisingly, if one studies the behaviour of quantum fields on top of this geometries, one discovers that LV-BHs still radiate by Hawking effect.

In this talk, I will present how the different notion of causality in these theories affects Hawking radiation and how this could possibly lead to observable LV signatures.

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