Contribution ID: **92** Type: **not specified**

Quantum-Gravitational Decoherence and the Number of Flavors in the Universe

Thursday 30 June 2022 09:30 (30 minutes)

We discuss the interplay of wave packet decoherence and decoherence induced by quantum gravity via interactions with spacetime foam for high energy astrophysical neutrinos. In this context we point out a compelling consequence of the expectation that quantum gravity should break global symmetries, namely that quantum-gravity induced decoherence may not only be the most sensitive probe for quantum properties of spacetime, but also can provide both a powerful tool for the search for new particles, including totally decoupled backgrounds interacting only gravitationally, and at the same time a window into the intricacies of black hole information processing.

Author: PÄS, Heinrich (TU Dortmund)

Presenter: PÄS, Heinrich (TU Dortmund)

Session Classification: Morning Session