Contribution ID: 19

Minimum-length metric: A tool to describe possible quantum features of horizons

Many pieces of evidence point to existence, at least at en effective level, of a lower limiting length of quantum origin. A mathematical tool is here presented which accomplishes the task of endowing spacetime with a description of distances with a minimum length incorporated, meaning that distances between any two space or time separated points tend to a finite limit when the points go to coincide. We show how this construction can be meant to include also the case of null separated points (in spite of being distances identically vanishing for them). The latter possibility turns out to be relevant for describing the evolution of (quantum) horizons, as their generators are null; in particular it predicts that their area can change only by finite (and calculable) amounts. We speculate on the possibility to see this quantum effects in the gravitational wave signal from the inspiral phase of binary black hole coalescences.

For talks:

I want to present a poster if I cannot get a talk slot

Primary author: PESCI, Alessandro (INFN Bologna)

Presenter: PESCI, Alessandro (INFN Bologna)

Session Classification: Poster Session

Track Classification: Observational Science (OSB): Div1