

Last gasps of a black hole

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After 40 years of active research the question of the fate of information that falls into a black hole is still open [1]. In this talk I will discuss recent results [2] that allow us to compute the entanglement entropy production in black hole evaporation. In particular I present a study of the information release in a model that takes into account the loop quantum gravity resolution of the black hole singularity [3]. The analysis of this phenomenon provides new insights into the entanglement structure of space-time during and after the complete evaporation of the black hole.

References

- [1] S.W. Hawking, *Breakdown of predictability in gravitational collapse*, Phys. Rev. D **14** (1976) 10, 2460.
- [2] E. Bianchi and M. Smerlak, *Entanglement entropy and negative-energy fluxes in two-dimensional spacetimes*, (2014), arXiv:1404.0602
- [3] C. Rovelli and F. Vidotto, *Planck stars*, (2014), arXiv:1401.6562

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