

Purification partners in moving mirror model

Takeshi Tomitsuka

Purification partners play a central role in the black hole information loss problem[1]. Recently, purification partners formula for an arbitrary mode in a Gaussian state was driven by [2]. We extend this formula to the moving mirror model which mimics a black hole evaporation process and investigate the relations between some mirror orbits and the partners. In particular, we examine where the information that black hole had in an early stage is stored[3].

References

- [1] M. Hotta, R. Schützhold, and W. G. Unruh. Partner particles for moving mirror radiation and black hole evaporation. *Physical Review D*, 91(12), Jun 2015.
- [2] Jose Trevison, Koji Yamaguchi, and Masahiro Hotta. Spatially overlapped partners in quantum field theory. *Journal of Physics A: Mathematical and Theoretical*, 52(12):125402, Feb 2019.
- [3] manuscript in preparation.