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The Unruh state for massless fermions on Kerr spacetime and its Hadamard property

lundi 24 juin 2024 15:00 (55 minutes)

We give a rigorous definition of the Unruh state in the setting of massless Dirac fields on slowly rotating Kerr spacetimes. This state is a natural state on a spacetime describing an eternal black hole and also appears as a final state in the context of the collapse of a rotating star. We will show that in the union of exterior and interior region the Unruh state is pure and Hadamard. One of the main ingredients of the proof is the scattering theory for the classical Dirac field. The talk is based on joint work with C. Gérard and M. Wrochna (Unruh state), Christiane Klein (case of large angular momentum of the black hole) as well as J.-P. Nicolas (classical scattering theory).

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