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## Quantum Field Theory with Boundary Conditions at the Horizons

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In using QFT to study black holes, coordinate transformations are needed with boundary conditions at the horizons. To avoid quantum copies it is imperative that the mapping must be one-to-one. It is explained why this turns the horizons into projective spheres instead of regular spheres. Also what is needed is the concept of 'antivacuum', a state on which all creation operators vanish. This procedure describes a black hole that only contains pure quantum states, and evolves with a unitary evolution operator, agreeing with standard QFT outside the horizons. It is explained how information is preserved and firewalls are transformed away. What used to be regarded as the 'interior' of a black hole is now relocated to regions beyond the infinite future and before the infinite past, hence of no direct physical relevance.

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