Holiday in a black hole

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It is first stressed that at the BH horizon, massive objects move with light speed. This is already evident from relating their local Minkowski frames with the known infinite redshift.

Escape from a black hole is possible by using the rocket's engines. In an eternal charged black hole, an exit typically happens automatically.

A closed time-like curve has an equal-time crossing point of the ingoing path and the path after exiting the BH. The crossing is a peculiarity of the mathematical description by the stationary observer; it does not occur for freely falling Painlev'e-Gullstrand observers, hence it does not relate to a physical event for any observer

The "grandfather paradox" thus gets a simple answer: the equal-time crossing does not relate to a physical event: the grandson cannot kill his young grandfather and thereby erase his existence.

If one throws a bomb in a nearby BH and it explodes inside, one is not safe. This has been shows for a quantum-bomb: for a neutron decaying in a black hole, the created electron can escape. After the classical demonstration, it is shown that narrow quantum wave packets move classically.

The Penrose-Carter diagrams for a Schwarzschild BH has only two patches: exterior and interior. For charged and/or rotating black holes, there is a patch for the exterior, for the manlte and for the core – no infinite tower of patches.

The misconception in the field is the separation between the "black" hole, where stuff and light can only go inwards, from the "white" hole, where they can only go outwards. In general, like with the bomb, both can occur simultaneously for the respective components. This is obvious when considering the local Minkowski frames. Such cases are neither covered nor excluded by trapping theorems.

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