

Abstract Submitted
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History of a black hole horizon DIETER BRILL, MCFP, University of Maryland — The horizon of a general (non-eternal) black hole is initially much more complicated than in the well-known case of a spherically symmetric spacetime; but finally it becomes simple and acquires an asymptotic “no hair” state. It is therefore simplest to evolve the horizon backwards in time from the final condition, by following its congruence of null geodesic generators. During the evolution, significant events occur when generators cross and exit the horizon, leaving behind a spacelike crease. This happens typically when matter crosses the horizon, but the crossing is not causally related to the crease. The crease set (if it were a priori known) can be an initial condition for horizon development forward in time. Examples will be given in 3- and 4-dimensional spacetimes.

Dieter Brill
MCFP, University of Maryland

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