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(SUMMARIES)

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FLAT-SPACE MODEL FOR BLACK HOLES

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Bergmann in 1964 pointed out the analogy between the co-ordinate singularity occurring at the Schwarzschild radius of a point mass and that at the cut-off of the rigidly hyperbolically moving co-ordinate frame ("rocket" frame) in Minkowski space. We extend this analogy to the entire Kruskal space on the one hand, and on the other hand to Minkowski space referred to the co-ordinates associated with the hyperbolic frame, and with the regions $t^2 - x^2 > 1$ removed. This analogy illuminates the horizon property of the Schwarzschild sphere, its character as a virtual light-front, its sudden change from being penetrable only outwards ("white hole") to being penetrable only inwards ("black hole"); also the respectively stationary and non-stationary character of the four distinct Kruskal regions, and their identification with two outer and two inner Schwarzschild regions (corresponding to two rocket regions and their complements). Another part of the analogy throws light on the "Lorentz" transformations of Kruskal space (Minkowski space) inducing a time translation in Schwarzschild space (rocket space). Finally, the analogy leads to an alternative metric to Kruskal's, which is free of implicit functions.

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