

Abstract Submitted
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The late-time tails in the Reissner–Nordström space-time revisited¹ CARL J. BLAKSLEY, LIOR M. BURKO, University of Alabama in Huntsville — We propose that the late-time tail problem in the Reissner-Nordström (RN) spacetime is dual to a tail problem in the Schwarzschild spacetime with a different initial data set: at a fixed observation point the asymptotic decay rate of the fields are equal. This duality is used to find the decay rate for tails in RN. This decay rate is exactly as in Schwarzschild, including the case of the extremely-charged RN spacetime (ERN). The only case where any deviation from the Schwarzschild decay rate is found is the case of the tails along the event horizon of an ERN spacetime, where the decay rate is the same as at future null infinity. As observed at a fixed location, the decay rate in ERN is the same as in Schwarzschild. We verify these expectations with numerical simulations.

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