

Abstract Submitted
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Metric of a Nonrotating Black Hole in a Tidal Environment IGOR VLASOV, ERIC POISSON, University of Guelph — We consider the perturbed field of a Schwarzschild black hole with a mass M much smaller than the local radius of curvature R generated by the external Universe. We discuss light-cone coordinates used to represent the combined metric of the black hole and external matter. The metric of the external Universe is found as an expansion in STF harmonics, then the Einstein equations are solved for the full metric at the first nonlinear order $O((M/R)^4)$. We discuss the gauge freedom and analyze the solution.

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