

The Cauchy Problem for the Wave Equation in the Kerr Geometry

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Abstract

After a brief general introduction to linear hyperbolic equations in a black hole geometry, I will report on recent work on the Cauchy problem for the scalar wave equation in the Kerr geometry. The main result is an integral representation which expresses the solution of the Cauchy problem as a superposition of solutions of the radial and angular ODEs which arise in the separation of variables.