

1056-35-1972 **Phillip D Whitman*** (pwhitman@math.princeton.edu), 11 Lawrence Dr # 105, Princeton, NJ 08540. *Uniqueness of solutions to linear wave equations*. Preliminary report.

Recent work on black hole uniqueness by Ionescu, Klainerman, Alexakis and others has led to increased interest in the problem of prescribing data on the event horizons of black holes for solutions to linear wave equations. Ionescu and Klainerman show that if we require that the solution be stationary on any Kerr spacetime, then we have uniqueness throughout the entire domain of outer communication. Additionally, if we require that the solutions be analytic, we will again have uniqueness throughout the domain of outer communication. However, we expect nonuniqueness (in general) of smooth, nonstationary (and not analytic) solutions. We will discuss recent work concerning unique continuation for linear wave equations on the Schwarzschild spacetime and Minkowski space. (Received September 22, 2009)