## 1052-83-277

Shabnam Beheshti<sup>\*</sup> (beheshti@math.rutgers.edu), Department of Mathematics - Hill Center, 110 Frelinghuysen Rd., Rutgers University, Piscataway, NJ 08854-8019, and Floyd L Williams. On the Wave Equation of a Charged, Massive Kerr Black Hole. Preliminary report.

We present the general solution of an ODE arising in the works of Goncharov and Firsova on topologically inequivalent configurations (TICs) of massive complex scalar fields on Kerr black holes; an orthogonality conjecture is also proved as a result of transforming the equation to Sturm-Liouville form. The solutions generalise, in some sense, the classical monopole spherical harmonics (Wu & Yang, '76) studied in the massless case. (Received August 30, 2009)