

1052-35-84

Yisong Yang* (yyang@math.poly.edu), Department of Mathematics, Polytechnic Institute of New York University, 6 Metrotech Center, Brooklyn, NY 11201. *Cosmological Charged Dust Solutions of the Coupled Einstein and Maxwell Equations*. Preliminary report.

It is well known that the coupled Einstein and Maxwell equations allow a static "N-blackhole" solution under an equal mass-charge condition due to the exact cancellation of gravitational attraction and Coulomb repulsion in order to ensure an equilibrium state. Such a solution is due to Hartle and Hawking. Here we consider the extension of the Hartle-Hawking solution to the continuous case modeling a space occupied by charged dust. Under the equal mass-charge condition, we show that there is an infinite family of smooth solutions realizing asymptotically flat spaces. (Joint work with Joel Spruck) (Received August 21, 2009)