UCDAVIS PHYSICS

Department of Physics
University of California
One Shields Avenue
Davis, CA 95616

530-752-1500

HEFTI Seminar

Maria Jose Rodriguez
University of Barcelona

Title: The phase structure of higher dimensional Black Rings and Black Holes.

Abstract: A rotating black ring solution in higher dimensions, conjectured to exist but unknown until the present work, has a regular horizon of topology S1 × SD?3 and incorporates the balancing condition of the ring as a zero-tension condition. The construction of the approximate solution for an asymptotically flat, neutral, thin rotating black ring in any dimension D ? 5 found by matching the near-horizon solution for a bent boosted black string, to a linearized gravity solution away from the horizon will be presented. In D ? 6, it will be shown that the black ring has higher entropy than the Myers-Perry black hole in the ultraspinning regime. By exploiting some correspondences, steps towards qualitatively completing the phase diagram of rotating blackfolds with a single angular momentum will be discussed, and also the proposal for an infinite number of pinched black holes of spherical topology, leading to a complicated pattern of connections and mergers between phases.

Thursday November 29, 2007- 2:00 to 3:30PM - Rm 416 PHY/GEO