Institut Henri Poincaré

11 rue Pierre et Marie Curie, 75231 Paris cedex 05

String Theory in Greater Paris

Rencontres Théoriciennes

“Supergravité, théorie des cordes et théorie M”

Jeudi 31 Mars 2016, 10:00

Roberto Emparan

U. Barcelona

Black holes in the 1/D expansion : Hydro-elastic complementarity

When the number of dimensions is very large, the gravitational field of a black hole is strongly localized near the horizon. Therefore in this limit the black hole can be effectively identified with a surface in an undistorted background geometry. The Einstein equations determine the equations that this 'effective membrane' must satisfy, which we have obtained for a large family of black branes. We find that black branes evolve as viscous fluids, but when they settle down they are naturally viewed as solutions of an elastic soap-bubble theory. The two views are complementary : the same variable is regarded in one case as the energy density of the fluid, in the other as the deformation of the elastic membrane.

Institut Henri Poincaré, salle 314, 3ème étage

Retrouvez les activités de la communauté parisienne de théorie des cordes sur
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