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String Theory in Greater Paris

Rencontres Théoriciennes

“Supergravité, théorie des cordes et théorie M”

Jeudi 26 Mai 2016, 10:00

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Soft Heisenberg Hair on Three-Dimensional Black Holes

The concept of asymptotic symmetries has played a significant role in the discovery and subsequent developments of gauge/gravity (or holographic) dualities. Examples include the analysis of Brown-Henneaux on asymptotic symmetries of AdS3 spaces, pointing at the existence of a two-dimensional Conformal Field Theory dual to quantum gravity in AdS3, or more recently the Kerr/CFT correspondence. New holographic scenarios have also emerged in the last couple years in which the putative dual field theories represent new classes of integrable two-dimensional field theories. In this work, we consider three-dimensional Einstein gravity with near horizon boundary conditions. Our near horizon symmetry algebra is surprisingly simple and differs from the ones encountered previously : it consists in the Heisenberg algebra for "soft hair". We discuss some physical implications of the emergence of this algebra and its relation to the asymptotic Virasoro generators, in the spirit of black hole complementarity.

Institut Henri Poincaré, salle 314, 3$^{\text{ème}}$ étage

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