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 1 Octobre 2020, 11:00

Celine Zwikel

Symmetries at Null Boundaries

I will present and motivate a program establishing, in full generality, the symmetries and charge analysis for gravitational theories near a generic null hypersurface without specifying any boundary condition. I will illustrate the first steps of this program on three dimensional Einstein gravity. In this case, there are three charges which are generic functions over the codimension one null surface. The integrability of the charges and the charge algebra depend on the state-dependence of symmetry generators which is a priori not specified. I will establish the existence of infinitely many choices that render the surface charges integrable. Then, I will argue that one expects this result to be valid for d > 3 when there is no Bondi news by developing some aspects of the four dimensional case. Finally, I will put our results in the context of earlier constructions of near horizon symmetries.

Institut Henri Poincaré, salle 314, 3ème étage

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