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Symmetries on Every Black Hole Horizon

Thursday, 19 May 2016 12:30 (20 minutes)

In this talk I will show that every Black Hole Horizon possesses an Asymptotic Symmetry Group (ASG) whose group structure is non trivial. I will begin with an introduction on known asymptotic symmetries, both at the Horizon and at the Null Infinity of Asymptotically Flat Spacetimes, a.k.a. the BMS group. Therefore I will describe the ASG in all the details, stating it as a Theorem. Briefly, the statement is that "every stationary Killing causal-disconnetting Horizon has an ASG, regardless of spacetime Dimensions, Cosmological Constants and Classical Conserved Charges associated to it".

I then will show the similarities between the ASG and BMS, focusing on the poorly known differences and I will end up with a brief discussion on the Classical Central Extension of the Charge Algebra.

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