Contribution ID : **147** Type : **not specified**

Applying Noether's theorem to the pure AdS_3 gravity

Sunday, 1 December 2024 15:20 (30)

In this work, we revisit the approach with the covariant phase space formalism for the asymptotic symmetry analysis in the pure AdS3 gravity. We modify the approach to a version which is exactly in the framework of Noether's theorem. And the key point in the modification is to take a systematical treatment of the boundary effects. In particular, we start from defining the pure AdS3 gravity in Lagrangian formalism, where we adopt proper asymptotic boundary conditions, and we take holographic renormalization in the off-shell level. We then follow Noether's theorem step by step with a careful treatment of the boundary terms. Following our modified approach, we get the following two results. First, we show that the asymptotic symmetries are indeed symmetries of the pure AdS3 gravity in the sense of Noether's theorem. Second, we compute the associated charges of the asymptotic symmetries with the equation of Noether charge, which reproduces the same result from the ordinarily used approach with the covariant phase space formalism.

Presenter(s) : WU, Jie-Qiang (Institute of Theoretical Physics, Chinese Academy of sciences)

Session Classification : Day 2: Parallel session III