Contribution ID: **330** Type: **Talk in the parallel session**

SL(2,R) Holonomies on the Light Cone

Monday, 5 July 2021 18:30 (25 minutes)

This talk describes how the Barbero–Immirzi parameter deforms the SL(2,R) symmetries on a null surface boundary. Our starting point is the definition of the action and its boundary terms. We introduce the covariant phase space and explain how the Holst term alters the symmetries on a null surface. This alteration only affects the algebra of the edge modes on a cross-section of the null surface boundar, whereas the algebra of the radiative modes is unchanged by the addition of the Barbero–Immirzi parameter. To compute the Poisson brackets explicitly, we work on an auxiliary phase space, where the SL(2,R) symmetries of the boundary fields are manifest. The physical phase space is obtained by imposing both first-class and second-class constraints. All gauge generators are at most quadratic in terms of the fundamental SL(2,R) variables. Finally, we discuss various strategies to quantise the system.

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