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Asymptotic symmetries of 3D higher-spin gauge theories and W-algebras

We discuss the relation between W-algebras and asymptotic symmetries of higher-spin gauge theories coupled to three-dimensional gravity with a negative cosmological constant. We first show how to describe interactions for higher-spin gauge fields D=2+1 via G x G Chern-Simons actions. Then we identify the asymptotically AdS solutions of the field equations and we show that their asymptotic symmetries are given by two copies of a centrally extended W-algebra selected by G. The central charge is the one identified by Brown and Henneaux in pure gravity.

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