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The Harry Dym hierarchy and AdS_3 General Relativity

Tuesday 3 September 2024 15:10 (20 minutes)

The novel connection between the asymptotic dynamics of 2+1 General Relativity with Integrable Systems has been studied recently due the possibility to explore holography beyond conformal symmetry. In this regard, we construct a set of suitable boundary conditions for the gravitational field which deforms those of Brown-Henneaux using negative powers of the central charge. Through a recursive method , we construct a novel infinite tower of conserved charges in involution under Poisson bracket. The boundary dynamics corresponds to the equations belonging to the Harry Dym hierarchy. For the simplest case, the theory admits black hole solutions such as the BTZ black hole.

Link to publication (if applicable)

https://arxiv.org/abs/2401.12338

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