

KdV-charged black holes

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We construct black hole geometries in 3d AdS with non-trivial values of KdV charges. The black holes are saddle points of the free energy that is holographically dual to that of the generalized Gibbs ensemble containing the chemical potentials of quantum KdV charges in 2d CFT. The introduction of the chemical potentials means the deformation of the boundary Hamiltonian which results in the changes of the boundary conditions in the gravity side. We show that new geometries, not the conventional BTZ ones, can be the leading saddles for a certain value of chemical potentials.

Presenter: Dr SUGISHITA, Sotaro (KEK)

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