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Correlation functions in holographic RG flow of 3d supergravity.

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The holographic duality relates observables in some d-dimensional quantum conformal field theory in a flat spacetime at strong coupling with quantities in a dual classical gravity defined in $(d+1)$-dimensional anti-de Sitter spacetime.

We construct and analyze observables in holographic RG flows for a 3-dimensional supergravity model with a scalar field and non-trivial potential. In the report we briefly review the procedure of the holographic renormalization, which yields the notion of the holographic RG flow. The holographic RG flow is described by the domain wall solution, which is asymptotically AdS and contains a scalar field with certain boundary conditions imposed. This solution can be interpreted as a deformation of a dual theory either by a relevant operator or a vacuum expectation value (VEV) of the operator. We will find one-point functions for scalar operators and components of stress-energy tensor. Using the perturbation of the metric and scalar field, as well as analysis near the boundary, a two-point correlation function will be obtained.

Primary author: ARKHIPOVA, Kseniia (JINR, BLTP)

Co-author: GOLUBTSOVA, Anastasia (Bogoliubov Laboratory of Theoretical Physics, Joint Institute for Nuclear Research)

Presenter: ARKHIPOVA, Kseniia (JINR, BLTP)

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