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A (super)gravitational perspective on magnetic defects

Localized deformations of quantum field theories present interesting opportunities to enhance our understanding of the features of such theories at different length scales. This class of deformations is of particular interest in light of its applicability to inhomogeneities in cosmological settings, as well as interfaces and impurities in condensed matter systems.

Despite the inherent interest of these systems, they are comparatively difficult to study (especially at strong coupling). Recently, progress has been made in quantifying the properties of these systems by employing a "holographic" duality that rephrases these deformed quantum field theories in terms of the variables of a dual higher dimensional (super)gravity theory. I provide a brief introduction to this application of gauge/gravity duality, focusing on the gravitational dual of a magnetic superconformal defect. I further overview recent notable results in this direction.

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