

Holography, 1-Form Symmetries and Confinement

Monday, 26 April 2021 13:30 (1 hour)

I will discuss confinement in 4d $N = 1$ $SU(N)$ Super-Yang Mills (SYM) from holography, focusing on the 1-form symmetry and the holographic realization in terms of the Klebanov-Strassler solution. I will show how from the 5d consistent truncation it is possible to identify the topological couplings that determine the 1-form symmetry (and thus global forms of the gauge group) and its 't Hooft anomalies. One of the topological couplings corresponds to a mixed 0-1-form symmetry anomaly, which describes chiral symmetry breaking in the infrared (IR) vacuum. I will also show how to derive this anomaly from the Maldacena-Nunez solution and Little String Theory realizations of pure SYM. I will then discuss how other couplings in the 5d supergravity description of the IR Klebanov-Strassler solution lead to counterterms realizing a gapped Topological Field Theory (TQFT) in the boundary, which saturates the mixed anomaly.

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Session Classification: Tor Vergata String Seminars