

AdS/CFT Holography from Gauged Supergravities

One of the most interesting consequences of string/M-theory, the most promising candidate for a theory of quantum gravity, is the AdS/CFT correspondence or AdS/CFT holography. This is a duality between string/M-theory on $AdS_{d+1} \times M$ backgrounds and d-dimensional conformal field theories on the boundary of AdS_{d+1} . Being a strong-weak duality, the AdS/CFT correspondence and its generalization to non-conformal theories are very useful to the study of strongly coupled quantum field theories using weakly coupled classical gravity theories. Most explicit, concrete and exact results along this line are obtained from $(d + 1)$ -dimensional gauged supergravity which is a generalization of Einstein's general relativity by incorporating supersymmetry and non-abelian gauge symmetries. Gauged supergravities are capable of providing interesting holographic solutions describing conformal fixed points, renormalization group (RG) flows and defects or interfaces in conformal field theories.

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Track Classification: High Energy and Particle Physics