T-dualities and scale-separated AdS_3 in type I

Zheng Miao*[1]

[1]Lehigh University [Bethlehem] – 27 Memorial Drive West, Bethlehem, PA 18015, United States

Abstract

We perform three T-dualities on previously found, classical $N=1$ scale-separated AdS_3 solutions of massive type IIA supergravity. These solutions arose from a compactification on a toroidal G_2-holonomy space with smeared O2/D2 and O6/D6 sources. The T-dual backgrounds are classical $N=1$ AdS_3 solutions of type IIB supergravity with O5/D5 and O9/D9 sources (type I) compactified on a space with G2G2-structure and non-vanishing Ricci scalar. We generalize the original solutions in IIA in the T-dual picture and present on the type IIB side fully classical solutions with parametric control, scale separation, and integer conformal dimensions for the dual operators in the corresponding CFT. We also obtain strongly coupled solutions with the same properties. These are S-dual to parametrically controlled classical solutions of the heterotic SO(32) string theory.

*Speaker