The landscape and the swampland of O(3,3) gauged supergravities

Mariana Graña[1] and Diego Perugini*†[2]

[1]Institut de Physique Théorique - UMR CNRS 3681 (IPHT) – Université Paris-Saclay, Centre National de la Recherche Scientifique, Direction de Recherche Fondamentale (CEA) – Institut de Physique ThéoriqueOrme des Merisiers batiment 774 Point courrier 136 CEA/DSM/IPhTCEA/Saclay F-91191 Gif-sur-Yvette Cedex, France

[2]Institut de Physique Théorique - UMR CNRS 3681 (IPHT) – Université Paris-Saclay, Centre National de la Recherche Scientifique, Direction de Recherche Fondamentale (CEA) – Institut de Physique ThéoriqueOrme des Merisiers batiment 774 Point courrier 136 CEA/DSM/IPhTCEA/Saclay F-91191 Gif-sur-Yvette Cedex, France

Abstract

Compactifications of string theory on group manifolds with fluxes, performed via the Scherk-Schwarz mechanism, give rise to gauged supergravities. Using double field theory, this procedure can be made T-duality covariant, yielding a set of geometric and non-geometric fluxes whose string theory origin is often unclear. In this paper, we systematically analyse the complete catalogue of half-maximal gauged supergravities in seven dimensions. By constructing a dictionary between orbifold twists and generalised fluxes, we identify which gaugings admit a realisation as (a)symmetric orbifolds, and which do not, establishing the latter as candidates for the gauged supergravity swampland.

Keywords: swampland, orbifolds, non geometric fluxes.

*Speaker

†Corresponding author: diego.perugini@ipht.fr