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S-folds: new N=4 D=4 consistent truncation of Type IIB and N=2 black-hole solutions

Wednesday 4 September 2024 11:50 (20 minutes)

Exceptional Field Theory provides a natural framework to study compactification of 10/11D maximal supergravities. This tool allowed us to build new AdS_4 solutions by providing consistent truncations of Type IIB supergravity to $\mathcal{N} = 8$ D = 4 gauged supergravities. In this talk, we will review some $AdS_4 \times S^1 \times S^5$ solutions of Type IIB supergravity called "S-folds" as well as new $\mathcal{N}=2$ black-hole solutions with such asymptotic geometry. We will show how we can deform these solutions to obtain exactly marginal, stable, nonsupersymmetric deformations, in tension with the non-susy AdS conjecture. Finally, we will present a new consistent truncation of Type IIB supergravity to pure D = 4 $\mathcal{N} = 4$ supergravity. This could be used to uplift several families of D = 4 solutions in the existing literature, so far thought to originate only from a truncation of M-theory on S^7 .

Link to publication (if applicable)

https://arxiv.org/abs/2112.11966 and work in progress

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