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AdS scale separation and the distance conjecture

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Obtaining genuine lower-dimensional theories from string theory remains a real challenge. This can be done if the Kaluza-Klein energy scale can be made much larger than the cosmological constant. In this talk, I review the situation for minimally supersymmetric models in type IIA string theory. There the separation of scales is achieved due to unbounded flux quanta that can be sent to infinity. In this talk, I explain how a novel scalar field in the open-string sector allows us to interpolate between such IIA vacua that differ in flux quanta and find that the limit of large fluxes is nicely consistent with the swampland distance conjecture. Furthermore, I discuss that the tower of states that becomes light, does not necessarily invalidate the effective field theory, suggesting the scale-separated vacua might not be in the Swampland. Finally, I comment on how this can be extended to other flux vacua.

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