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# Emergence of R^4 terms in M-theory

*Thursday, 27 June 2024 14:45 (15 minutes)*

In its original formulation, the Emergence Proposal postulates that terms in the low-energy effective action are emerging by integrating out towers of states becoming exponentially light in asymptotic regions of the moduli space, in agreement with the Swampland Distance Conjecture. In this talk, I will motivate an M-theoretic refinement of the Emergence Proposal by revisiting the computation of a particular higher derivative coupling in toroidal compactifications of M-theory. On a technical level, these calculations rely on employing an appropriate regularization method and demonstrate that integrating out the full infinite towers of light states is crucial for reproducing the known results completely.

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**Session Classification:** Parallel session