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Aspects of string theory compactifications with non trivial torsional homology

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The concept of integer homology naturally arises in string theory compactifications to implement flux quantization conditions. However, only the free part is usually considered. We recently discovered that if torsional homology is considered, a new natural interpretation of some massive KK modes with mass much lower than the KK scale arises. Using such description, we found that in some type 2 compactifications the 4d EFTs may have access to non-trivial topological information of the 6d internal manifold. More precisely, it is possible to extract the linking numbers from EFT data when a non-renormalization theorem for linking numbers holds. During the talk I will explicitly prove such a result in an example. The talk is meant to be complementary to the talk given by Fernando Marchesano.

Presenter: ZATTI, Matteo Session Classification: Parallel