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Life Without Holomorphy

Wednesday 14 July 2021 12:00 (30 minutes)

Supersymmetry, in tandem with holomorphy, is often used as a tool in understanding the resulting low energy effective field theory generated by a string compactification. In this talk we discuss how to extract constraints on string compactifications as derived from robust topological structures associated with anomalies. We illustrate with two examples. The first is based on joint work with M. Cvetic, E. Torres and G. Zoccarato on a recent analysis of M-theory on a Spin(7) space given by a four-manifold of ADE singularities, in which we use parity anomalies to constraint the resulting effective field theory. The second is based on joint work with A. Debray, M. Dierigl and M. Montero on an analysis of duality anomalies in IIB string theory. This also leads us to the discovery of additional candidate topological sectors of IIB compactifications, with implications for the Swampland program.

Presenter: Prof. HECKMAN, Jonathan (University of Pennsylvania)