

Virtual TEP Seminar

UCLA

Tuesday, January 26th @ 4pm

Via Zoom

“Supersymmetric Flux Vacua and Calabi-Yau Modularity”

Richard Nally (Stanford)

Abstract: Most familiar constructions in string theory are rooted in the complex geometry of the compact dimensions. On the other hand, much of modern mathematics focuses on arithmetic geometry, where we consider the properties of varieties over smaller fields such as \mathbb{Q} . In this talk, following recent work (arXiv:2001.06022, arXiv:2010.07285) with S. Kachru and W. Yang, I will explain how string theory can be related to arithmetic. In particular, I will argue that supersymmetric flux vacua admit arithmetic structures closely related to those of elliptic curves, and moreover that these arithmetic structures are related to the geometry of the F-theory description of the flux compactification.