Institut Henri Poincaré

11 rue Pierre et Marie Curie, 75231 Paris cedex 05

String Theory in Greater Paris

Rencontres Théoriciennes

“Supergravité, théorie des cordes et théorie M”

Jeudi 3 Juin 2021, 11:00

Wolfgang Lerche

CERN

Fluxes, Holomorphic Anomalies and Elliptic Genera in d=4

Motivated by tests of Weak Gravity Conjectures, we investigate properties of elliptic genera of string theories that arise in large distance limits of the moduli space of F-theory compactifications. This allows for a non-perturbative definition of elliptic genera that goes beyond the ordinary world-sheet description. While this construction has been known for six-dimensional theories, we find the four-dimensional variant to be surprisingly complex. The essential new ingredient is background fluxes, and these lead to different sectors of the elliptic genus with different modular properties. Crucial is the appearance of derivatives which leads to novel modular (and hence, holomorphic) anomalies that are worse than naively expected. We also give a physical interpretation of these phenomena.

Institut Henri Poincaré, salle 314, 3ème étage

Retrouvez les activités de la communauté parisienne de théorie des cordes sur
`http ://string.lpthe.jussieu.fr`
La liste de tous les séminaires en région parisienne est disponible sur
`http ://string.lpthe.jussieu.fr/semparis`