

## Flux Vacua and the Cosmological Constant (T: 50mn + Q: 10mn)

*vendredi 13 mai 2022 10:00 (1 heure)*

We construct vacua of string theory in which all moduli are stabilized, and the magnitude of the cosmological constant is exponentially small. The vacua are supersymmetric AdS solutions in flux compactifications of type IIB string theory on orientifolds of Calabi-Yau hypersurfaces. The vacuum energy is small because we ensure the exact cancellation of all perturbative contributions, through an explicit choice of integer parameters determined by the topology and quantized fluxes. The nonperturbative contributions that remain are exponential in these integers. Finding cosmological constants of small magnitude in this landscape is exponentially easier than in Bousso-Polchinski landscapes, but extending our approach to positive cosmological constants in realistic universes is a difficult open problem. Mike's vision for approaching the landscape statistically, as well as his profound contributions to the technical side of flux vacua, laid the foundation for this work.

**Orateur:** Prof. MCALLISTER, Liam (Cornell University)

**Classification de Session:** Morning chair: Frank Ferrari