

## Modular Flavor Symmetries and CP from the top down

*Tuesday 28 June 2022 12:00 (30 minutes)*

The framework of compactified heterotic string theory offers consistent UV completions of the Standard Model of particle physics. In this approach, the existence of flavor symmetries beyond the Standard Model is imperative and the flavor symmetries can be derived from the top down. Such a derivation uncovers a unified origin of traditional **discrete flavor symmetries**, discrete **modular flavor symmetries**, **discrete R symmetries** of supersymmetry, as well as **CP symmetry** - altogether dubbed the **eclectic flavor symmetry**. I will illustrate how the eclectic flavor symmetry is unambiguously computed from the top-down construction, discuss the different arising sources of spontaneous flavor symmetry breaking, and expose possible lessons for bottom-up flavor model building. Finally, I will focus on one explicit example model that provides a successful fit to all available experimental data while giving rise to concrete predictions for so-far undetermined parameters.

**Author:** TRAUTNER, Andreas

**Co-authors:** Mr BAUR, Alexander (TU Munich); NILLES, Hans Peter; RAMOS-SANCHEZ, Saul (UNAM, Mexico); VAUDREVANGE, Patrick (TU Munich)

**Presenter:** TRAUTNER, Andreas

**Session Classification:** Morning Session