



Contribution ID: 7

Type: **not specified**

Vacua, Symmetries, and Higgsing of Chern-Simons Matter Theories

Wednesday 24 September 2025 14:30 (15 minutes)

In supersymmetric theories, an object of great interest is the moduli space of vacua, parameterised by the VEVs for the scalars in the various supermultiplets and endowed with a strict geometric structure, which factorises into the so-called maximal branches and encodes the generalised Higgs mechanism.

In this talk, I will explore the moduli space of 3d $N=3$ and $N=4$ Chern-Simons-matter theories realised via Type IIB brane setups. For $N=4$ theories with CS level 1, $SL(2, \mathbb{Z})$ dualisation yields CS-free duals, allowing for a complete analysis of the moduli space through already studied models. For $N=4$ theories with higher CS levels, where this approach is not applicable, I will probe the moduli space of vacua by introducing two auxiliary theories, known as magnetic quivers, that capture the maximal branches of the original theory and enable the study of their RG flows. In the $N=3$ case, I will extend the magnetic quiver prescription to each maximal branch, providing the first comprehensive picture of their moduli spaces, both in the Lagrangian and in the non-Lagrangian case.

Primary authors: Dr MARINO, Fabio (University of Vienna); Dr SPERLING, Marcus (University of Vienna)

Presenter: Dr MARINO, Fabio (University of Vienna)

Session Classification: Parallel Sessions Wednesday String

Track Classification: Strings & Mathematical Physics