

# Charting the space of 4d supersymmetric theories from string theory

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Supersymmetric field theories represent an invaluable theoretical laboratory for the exploration of non-perturbative dynamics and their geometric realization in string theory has proven to be a very effective tool to understand them, allowing us to construct and study in detail the properties of strongly-coupled theories even when they lack a lagrangian description. In this talk I will present a new method to engineer four dimensional theories with eight supercharges from D3 branes probing non-perturbative Type IIB (F-theory) backgrounds. This allows us to construct many new  $N=2$  theories, including  $N=3$  models and all superconformal theories with one-dimensional Coulomb branch. Furthermore, by exploiting this construction we find a connection between these 4d theories and superconformal theories in six dimensions which proves crucial to understand their moduli space of vacua.

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