

Studies of five-dimensional BPS spectra with applications to enumerative geometry

Wednesday, July 6, 2022 3:30 PM (1 hour)

The framework of spectral networks was introduced in physics as a way to compute BPS states of 4d $N=2$ gauge theories. In this talk I will review an extension of this framework, known as exponential networks, which arises in the study of 5d $N=1$ BPS states. Geometric engineering connects 5d $N=1$ BPS spectra to enumerative invariants of certain Calabi-Yau threefolds, I will review the computation of old and new results in the setting of local toric threefolds. I will also sketch a new perspective on this framework, which elucidates the geometric meaning of the invariants computed by networks, in terms of elementary data of A-branes in the mirror geometry, recovering an old conjecture of Joyce.

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