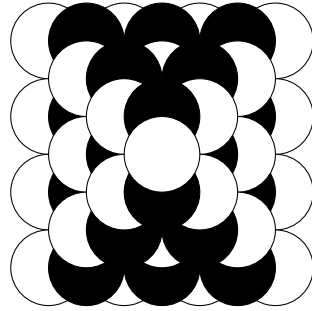


DIMER MODELS AND ALGEBRAIC GEOMETRY



Given a toric Calabi-Yau manifold X , topological string theory associates with X a function of two variables q and t , called the topological string partition function. The first undetermined encodes interactions between strings. It is related to the string coupling constant, u , via $q = -e^{iu}$. The second undetermined is nothing but the Kähler class. The partition function admits different Laurent series expansions, the coefficients of all of these expansions being some invariants of X .

You did not understand a single word on what precedes? This is absolutely not an issue, this talk precisely aims to make it more understandable! In an article from 2008 B. Szendrői explains how to reduce the computation of these invariants to a purely combinatoric problem, by the mean of an example we will study during the talk. In order to do so, we will speak about tori actions, pyramidal partitions and dimer models.