Lotte Hollands

Non-perturbative partition functions for supersymmetrics QFT's

Abstract

Recently, a rather elegant picture has emerged for the non-perturbative topological string. In this picture the non-perturbative partition function has a piecewise-constant dependence on an additional phase, and jumps have an interpretation in terms of certain BPS states.
In this colloquium I will explain these ideas from the perspective of four-dimensional N=2 field theory and its lift to five dimensions, with the four-dimensional Seiberg-Witten theory and the resolved conifold as two main examples. This talk is based on 2109.14699, 2203.08249 and work in progress.