

Moduli spaces in gauged linear sigma model (GLSM)

Yongbin Ruan (University of Michigan)

Abstract: Gauged linear sigma model (GLSM) is a 2d quantum field theory invented by Witten in early 90's to give a physical derivation of Landau-Ginzburg (LG)/Calabi-Yau (CY) correspondence. Since then, it has been investigated extensively in physics by Hori and others. Recently, an GLSM algebraic-geometric theory has been formulated by Fan-Jarvis-Ruan so that we can start to rigorously compute its invariants and match with physical prediction. The core of this mathematical theory are certain curve-counting moduli spaces. In this lecture, we will slowly build up these moduli spaces. We will start from the moduli space of curves, then curves with line bundle, ... and so on. The lecture is aiming to graduate students.