

## Yongbin Ruan: A mathematical theory of gauged linear sigma model (GLSM)

GLSM was a physical model proposed by Witten in early 90's to give a physical derivation of Landau-Ginzburg (LG) /Calabi-Yau (CY) correspondence. Since then, it found application in many area of geometry and physics such as mirror symmetry. In the talk, I will describe a mathematical theory of gauged linear sigma model by constructing a variety of new moduli spaces and their virtual cycles.

The construction is purely algebraic and applies to so called the sector of compact type. Then, Witten's physical derivation of LG/CY correspondence can be interpreted as a series of wall-crossing formula of GLSM to connect FJRW-theory to GW-theory. If the time is permitted, other applications will be touched. This is a joint work with Huijun Fan and Tyler Jarvis.