

GAGC 2019
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Yizhen Zhao: Landau-Ginzburg/Calabi-Yau correspondence for a complete intersection via matrix factorizations.

In this talk, I will introduce two curve counting theories coming from a variation of GIT stability condition. One of them is the Gromov-Witten theory of a Calabi-Yau complete intersection; the other one is a theory of a family of isolated singularities fibered over a projective line, which is developed by Fan, Jarvis, and Ruan recently. I will show these two theories are equivalent after analytic continuation. For Calabi-Yau complete intersections of two cubics, I will show that this equivalence is directly related - via Chern character - to the equivalences between the derived category of coherent sheaves and that of matrix factorizations of the singularities. This generalizes Chiodo-Iritani-Ruan's theorem matching Orlov's equivalences and quantum LG/CY correspondence for hypersurfaces.