

Workshop on Representation Theory, Geometry & Combinatorics

Organizer: Mark Haiman

Monday June 2–Friday June 6, 9:30–5:00pm, Bechtel 120ABC

Dagan Karp, UC Berkeley

Chern-Simons theory, Gromov-Witten theory and crepant resolutions

The Chern-Simons theory of a real three manifold is encoded in the formalism of Reshetikhin-Turaev. On the other hand, the Gromov-Witten theory of a toric Calabi-Yau threefold is computed using the combinatorics of the Topological Vertex. I hope to discuss some conjectures and theorems relating these subjects, and discuss the specific example of quotients the resolved conifold, and its resolution.