

Title: DT/PT correspondence for Calabi-Yau fourfolds

Abstract: Hilbert schemes and stable pair moduli spaces on compact Calabi-Yau fourfolds generally do not carry a perfect obstruction theory. Nonetheless, they have a virtual class constructed in special cases by Cao-Leung and in general by Borisov-Joyce. We conjecture a numerical DT/PT correspondence for the resulting invariants. On toric Calabi-Yau fourfolds, we conjecture a (2-leg) K-theoretic DT/PT correspondence using invariants which were first discovered for Hilbert schemes of points by Nekrasov-Piazzalunga. The latter implies Nekrasov-Okounkov's (2-leg) K-theoretic DT/PT correspondence for toric threefolds. Joint work with Y. Cao and S. Monavari.