

Title:

Lecture on non-commutative Donaldson-Thomas theory

Abstract:

Donaldson-Thomas theory is a theory of moduli spaces of sheaves on a 3-dimensional Calabi-Yau variety, which is expected to be equivalent to Gromov-Witten theory. Recently, categorical methods for Donaldson-Thomas theory have been developed in the literatures. In this lecture series, introducing non-commutative Donaldson-Thomas theory, I will explain such categorical methods.

1. Quiver representations and their moduli spaces
2. Derived categories and their equivalences
3. Bridgeland's stability conditions
4. NCDT moduli spaces and wall-crossing
- (5. Open NCDT invariants)

Reference

[1]

Tom Bridgeland
Stability conditions on triangulated categories
Annals of Mathematics, 166 (2007), 317-345

[2]

Balazs Szendroi
Non-commutative Donaldson-Thomas invariants and the conifold
Geometry & Topology 12 (2008) 1171-1202 `begin_of_the_skype_highlighting`
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[3]

Kentaro Nagao and Hiraku Nakajima
Counting invariant of perverse coherent sheaves and its wall-crossing
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