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From Frobenius manifolds to hyperKahler geometry via Donaldson-Thomas invariants

Wednesday, June 30, 2021 9:30 AM (40 minutes)

In the theory of Frobenius manifolds a connection with a regular and an irregular singularity, with associated Stokes phenomena, plays a fundamental role. In this talk the link between Donaldson-Thomas (DT) invariants and such isomonodromy problems - with an infinite dimensional Lie algebra - is studied. The DT-invariants control the Stokes factors between sectors, and the various objects can be combined to form what is called a Joyce structure, and this in turn defines a (complex) hyperKahler structure on a certain tangent bundle TM. Finally, borrowing ideas from the deformation quantisation programme, the relationship between quantum DT-invariants and Moyal-deformations of hyperKahler structures is studied.

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