

Borel-Laplace multi-transform, and integral representations of solutions of qDEs

Thursday, May 26, 2022 11:30 AM (45 minutes)

The quantum differential equation (qDE) is a rich object attached to a smooth projective variety X . It is an ordinary differential equation in the complex domain which encodes information of the enumerative geometry of X , more precisely its Gromov-Witten theory. Furthermore, the monodromy of its solutions conjecturally rules also the topology and complex geometry of X . These differential equations were introduced in the middle of the creative impetus for mathematically rigorous foundations of Topological Field Theories, Supersymmetric Quantum Field Theories and related Mirror Symmetry phenomena. Special mention has to be given to the relation between qDE's and Dubrovin-Frobenius manifolds, the latter being identifiable with the space of isomonodromic deformation parameters of the former. The study of qDE's represents a challenging active area in both contemporary geometry and mathematical physics. In this talk I will introduce some analytic integral multitransforms of Borel-Laplace type, and I will use them to obtain Mellin-Barnes integral representations of solutions of qDEs.

Primary author: COTTI, Giordano (Scuola Internazionale Superiore di Studi Avanzati (SISSA))

Presenter: COTTI, Giordano (Scuola Internazionale Superiore di Studi Avanzati (SISSA))