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Analytic continuation of topological strings

Monday 13 January 2025 18:00 (1 hour)

The partition function of topological string theory on any family of Calabi-Yau threefolds is defined perturbatively as an asymptotic series in the topological string coupling and encodes, in a holomorphic limit, higher genus Gromov-Witten as well as Gopakumar-Vafa invariants. I will prove that the partition function of topological strings of any CY in this limit can be written as a product, where each factor is given by the partition function of the resolved conifold with shifted arguments, raised to the power of certain sheaf invariants. I will use this result to put forward an expression for an analytic continuation of the topological string partition function in this limit, as a product over analytic functions in the topological string coupling which correspond to the Borel sums for the resolved conifold found previously using resurgence.

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