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(I) Frobenius manifolds with irrelevant deformations

Theory of primitive forms by K. Saito allows to build a family of Frobenius manifolds or flat structures from a singularity. When such a singularity is weighted homogeneous, the Frobenius manifold corresponds to deformations of conformal field theories. In such a case the deformation parameters naturally fall in three groups: relevant, marginal, and irrelevant ones, which are the most difficult for computations. In the talk I will explain how to compute Frobenius manifold data for a particular class of Frobenius manifolds with irrelevant deformations based on perturbative expansion for primitive forms.

(II) Liouville gravity and topological gravity: disc one-point functions

Liouville gravity is a theory of 2d quantum gravity which first appeared in a work of A. Polyakov on non-critical strings. It is believed that Liouville gravity is connected with topological gravity/matrix models. So-called resonance transformations play the key role in this correspondence, however, only a few things are known explicitly. I plan to explain the correspondence for open surfaces, specifically, for disc one-point correlation functions.