

Special geometry on the 101-dimensional moduli space of the quintic
threefold.

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1 Abstract

In the poster I plan to present the recent progress in computations of the special Kähler geometry, which gives couplings of the effective theory in superstring compactifications. Namely, in a series of papers with Alexander Belavin we propose a new method for such computations. The necessary data is contained in the holomorphic volume of the CY manifold. Our method is based on the connection of the middle cohomology of the CY manifold with a chiral ring of the Landau-Ginzburg model. Using this connection we are able to compute all the period integrals (204 for the quintic) as functions of all deformation parameters (101 for the Quintic) and the intersection matrix of integration cycles and to write an explicit formula for the tt^* metric for the Quintic and many other Calabi–Yau manifolds.