**Pairings and Mirror symmetry** (*Cheol-hyun Cho*)

Given a (homological) mirror symmetry between a symplectic manifold and its Landau-Ginzburg mirrors, we may ask whether mirror symmetry preserves pairing structures. For a symplectic manifold, Poincare duality provides pairings for both open and closed theories. A matrix factorization category has the Kapustin-Li pairing and Jacobian ring has a residue pairing. We introduce what we call, multi-crescent Cardy identity, which is used to compare these pairings. We will find that interesting conformal factor arises between these pairings in mirror symmetry. This is a joint work with Sangwook Lee and Hyungseok Shin.

**Augmentations and sheaves for knot conormals** (*Honghao Gao*)

Knot invariants can be defined using Legendrian isotopy invariants of the knot conormal. There are two types of invariants raised in this way: one is the knot contact differential graded algebra together with augmentations associated to this dga, and the other one is the category of simple sheaves microsupported along the knot conormal. The Nadler-Zaslow correspondence suggests a connection between the two types of invariants. In this talk, I will manifest an explicit map between augmentations and simple sheaves.

**Gamma conjecture for Fano and Calabi-Yau manifolds** (*Hiroshi Iritani*)

The Gamma class is a characteristic class associated with an (almost) complex manifold: it is defined over transcendental numbers and involves Riemann zeta values. Conjecturally the Gamma class gives an integral structure in quantum cohomology which is mirror to the natural integral structure on the B-model. In the first talk, I will give an introduction to Gamma conjecture for Fano manifolds, formulated in joint work with Galkin and Golyshev. In the second talk, I will explain a Gamma conjecture for Calabi-Yau mirror pairs and discuss how the Gamma conjecture follows from the SYZ picture and tropical geometry. The latter talk is based on joint work with Abouzaid, Ganatra and Sheridan.

**Gamma conjecture I for del Pezzo surfaces** (*Hua-Zhong Ke*)

Gamma conjecture I and the underlying Conjecture O for Fano manifolds were proposed by Galkin, Golyshev and Iritani recently. Roughly speaking, Conjecture O concerns the distribution of eigenvalues of the linear operator given by quantum multiplication by the first Chern class, and Gamma conjecture I concerns the asymptotic behavior of flat sections of quantum connection with smallest asymptotics. We show that both conjectures hold for all two-dimensional Fano manifolds. This is joint work with Jianxun Hu, Changzheng Li and Tuo Yang.

**Topological recursion for genus one and two curve families and Jacobi forms** (*Jie Zhou*)

I will talk about the Eynard-Orantin topological recursion for genus one and two curves. I shall focus on the mirror curve families of some examples of toric Calabi-Yau threefolds. The key idea is to use

uniformization of these algebraic mirror curve families. This allows to express the basic ingredients in topological recursion in terms of the pull-back along the Abel-Jacobi map of rational functions and forms on the Jacobian varieties of these algebraic curves, which are naturally related to Jacobi forms. By induction, the differentials produced by topological recursion can then be shown to be the pull-backs of Jacobi forms as well. Using the proof of the Remodeling Conjecture for toric Calabi-Yau threefolds by Fang-Liu-Zong, we then conclude that modulo a change of parameter, the open Gromov-Witten potentials of our examples are also pull-backs of Jacobi forms. As a byproduct of the differential ring structure of Jacobi forms, the Yamaguchi-Yau functional equations satisfied by these Gromov-Witten potentials can be easily obtained.

The talk is based on joint works with Bohan Fang, Yongbin Ruan and Yingchun Zhang.