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The Hong Kong University of Science and Technology

Department of Mathematics

Hong Kong Geometry Colloquium

The remodeling conjecture I: Eynard-Orantin recursion on the mirror curve

By

Prof. Bohan Fang
Peking University

Abstract

The mirror of a toric Calabi-Yau 3-orbifold is a spectral curve. The Eynard-Orantin recursion on this spectral curve will produce all genus Gromov-Witten open-closed invariants of the toric CY 3-fold. This is the remodeling conjecture by Bouchard-Klemm-Marino-Pasquetti. I will describe the mirror curve setup, the recursion and the conjecture. I will also explain a graph sum formula of this recursion. Comparing with the A-side graph sum will lead to a proof of the conjecture. The talk is based on the joint work with Chiu-Chu Melissa Liu and Zhengyu Zong.

Date : Saturday, 26 November 2016
Time : 10:00a.m.-11:00a.m.
Venue : Room 2464, Academic Building
(near Lifts 25&26), HKUST

The Remodeling Conjecture II: Givental formula and all genus open-closed mirror symmetry

By

Prof. Zhengyu Zong
Tsinghua University

Abstract

In this talk, I will first talk about the A-model quantization process. The key ingredient in this step is the orbifold Givental formula which expresses the higher genus Gromov-Witten potential in terms of the Frobenius structures. On the other hand, the B-model quantization is nothing but the Eynard-Orantin recursion itself. The bridge connecting the A-model Givental formula and the B-model recursion formula is the graph sum formula. After rewritting both A-model and B-model quantization formulas as graph sum formulas, the Remodeling Conjecture can be proved by comparing each factor in the graph sum formulas. This final step only involves genus zero data and hence it follows from the genus zero mirror theorem for toric orbifolds and the disk mirror symmetry for toric CY 3-orbifolds. If time permits, I will also talk about future applications of Remodeling Conjecture. This talk is based on the work joint with Bohan Fang and Melissa Liu.

Date : Saturday, 26 November 2016
Time : 11:20a.m.-12:20p.m.
Venue : Room 2464, Academic Building
(near Lifts 25& 26), HKUST

All are welcome !

Light refreshment will be provided at Room 3493 from 11:00 am to 11:20 am