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THE HONG KONG UNIVERSITY OF SCIENCE & TECHNOLOGY

Department of Mathematics

SEMINAR ON PURE MATHEMATICS

Speaker: **Prof. Shuai GUO**
Beijing International Center for Mathematical Research

Zoom Meeting :
https://hkust.zoom.us/j/9584764665
Passcode: **BCOV**

Date	Time	Title
8 Nov 2022 (Tue)	**8:15-9:45am**	**BCOV's Feynman rule for quintic threefold**

Abstract

We will introduce BCOV's B-model Feynman rule and its A-model approach. BCOV's Feynmann rule involves the notions of geometric quantization, normalize basis, propagators, etc. We explain where they comes from in the A-model theory, and thus naturally recover the B-models Feymann graph.

10 Nov 2022 (Thu)	**8:15-9:45am**	**Conifold theory and gap conjecture**

Abstract

We introduce Huang-Klemm-Quackenbush's physics approach to the higher genus Gromov-Witten invariants, and the motivation to consider conifold theory for the quintic threefold. In physics, the conifold theory was originally introduced as the theory for a singular Landau-Ginzburg potential by Ghoshal and Vafa. We will give known mathematical example which has the gap phenomenon. In the end, we will explain that in the quintic case, the [0,1]-theory introduced in Lecture 1 contains the information which Huang-Klemm-Quackenbush have used and clarify its relation to the conifold gap conjecture.

12 Nov 2022 (Sat)	**2:30-4:00pm**	**Feynman rule for two-parameter model**

Abstract

In this lecture, we discuss the Calabi Yau threefold X_{3.3} in P^2 x P^2. We hope to find the A-model counterpart of the normalize basis, propagators, polynomiality, etc. In this correspondence, the equation for the propagators is crucial, which was originally introduced by Alim-L¨ange in physics. We hope to explain how it fit into our A-model framework.

All are Welcome!